

**INSTITUTIONAL MECHANISMS FOR WATER SUPPLY TO
INFORMAL SETTLEMENTS IN ZAMBIA:
A GROUNDED THEORY APPROACH**

by

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Declaration

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Abstract

Effective provision of water services to informal settlements in Zambia has, and continues to challenge policy makers and those mandated to provide this service. Despite effecting widespread reforms for the sector in the mid to late 1990's with a prime intent of rapidly reinvigorating the sector, problems still remain as vast numbers of the informal settlement populace continue to live without adequate and sustained access to clean water. The complex nature of these informal settlements has been cited as one of the key factors responsible for this situation in that the housing units are constructed devoid of any municipal planning and control; are poorly constructed; and, not laid out in a systematic geometric array which is essential for effective provision of modern water reticulation infrastructure. Other factors include challenges by the service providers to mobilise resources required to install the network infrastructure and also their inability to fully meet and recover their operational costs. The literature review questioned whether other actors should be willingly allowed to participate in order to augment service provision and also whether provision of incentives to the service providers would serve to eradicate this condition of poor service delivery. The research was undertaken using a grounded theory approach within the social constructivist paradigm which is most suited where there is an absence of theory to underpin the research area, or where the existent knowledge base in the particular area is devoid of any theoretical foundation. The methods of data collection included focus group discussions and in-depth semi-structured interviews. The research revealed that existing service delivery approaches to these areas needs to be remodelled primarily through overhaul of the existent policy framework, if they are to fully cater for the various operational impediments inherent in informal settlements. Other findings included the requirement of operational incentives to entice the service providers to service these areas and the formation of 'quad partnerships' through which to render services. The theoretical propositions (key cornerstones) for informal settlement water supply stated in this research were derived and assembled from these key findings.

Dedications

This work is dedicated to first and foremost my parents Paul Kapopo Banda and Pauline Mukonda Manda Banda (both deceased) who played a key role in my long journey in pursuit of academic excellence. Dad would always remind me that my option would be to pursue a career as a newspaper vendor if I didn't feel like continuing in my school-work. Mom on the other hand would "never spare the rod" when I would exhibit trends of going off-track. Thank you Mom and Dad I will ever miss you both.

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To my siblings Robby (late), Elijah, Sheila, Agrippa (Late), Paul and Ceciwa....I did this not for myself but for our family.....!

Lastly to my children Mukonda, Madalitso, Kamoto and Msinje.....*guys I have set the benchmark once again.....beat it!*

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Acronyms

BOT	Build Operate Transfer
BOOT	Build Operate Own Transfer
DTF	Devolution Trust Fund
CBO	Community Based Operator
CEO	Chief Executive Officer
CU	Commercial Utility
FGD	Focus Group Discussion
GOU	Government of Uganda
GRZ	Government of Zambia
HM	Her Majesty's
LA	Local Authority
MDGs	Millennium Development Goals
NCPPT	National Council for Public Private Partnerships
NGO	Non-Governmental Organisation
NPM	New Public Management Theory
NWSC	National Water and Sewerage Corporation
NWASCO	National Water Supply Sanitation Council
NWP	National Water Policy
O & M	Operation and Maintenance
OFWAT	Water Services Regulatory Authority
PPP	Public Private Partnership
PSP	Private Sector Participation
PU	Public Utility
RDC	Residents Development Committee
ROOT	Rehabilitate Operate Own Transfer
SMEs	Small and Medium scale Enterprises
SSIP	Small Scale Independent Provider
SOE	State Owned Enterprise
UN	United Nations
UNDP	United Nations Development Programme
UN HABITAT	United Nations Human Settlements Programme
UK	United Kingdom
US \$	United States Dollar
USA	United States of America
WDC	Ward Development Committee
WMC	Water Management Committee
WHO	World Health Organisation
WSS	Water Supply and Sanitation
WSSC	Water Supply and Sanitation Collaborative Council
WUP	Water Utility Partnership
ZMK	Zambian Kwacha

Glossary of Terms

Informal Settlements (also referred to as peri-urban areas or slums)

Are settlements within an area of jurisdiction of a local authority characterised by high population density, high density of poorly constructed sub-standard housing units with inadequate basic services such as water supply, sewerage, solid waste disposal and collection, access roads and storm water drainage.

Service Delivery

Refers to the provision of water services to urban communities by a mandated (i.e. licensed) water service provider.

Access to Water

Having piped water from a publicly managed reticulation, borehole or protected spring available within a housing a unit or located within a distance of 200m from a dwelling and without subjecting the occupants of a housing unit to extreme effort when acquiring their household water requirements.

Public Private Partnerships

A mutually beneficial business arrangement between the public and private sectors, formed for the principal purpose of enhancing public service delivery.

Vendor

Refers to a private entrepreneur (or private entity) hired by a public entity (a commercial utility) to provide some aspect of its (the public entity) water service delivery function over an agreed period and terms in an informal settlement within it's (the public entity) area of operational jurisdiction.

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 Introduction

This chapter introduces the research topic and gives an overview of the whole research process undertaken. It begins by providing a background of the research, its contextual setting and a detailed articulation of the research problem. The objectives and reasons for carrying out this research are outlined together with a brief explanation of the methodological approach used and the expected value the research shall pose. It ends with a brief description of the overall layout of the thesis and a brief summary.

1.2 Context and Background to the Research

Effective provision of safe water supply services to poor urban communities in Zambia continues to be one of the most cumbersome challenges for those entrusted with the mandate namely the commercial utilities and the local authorities. Zambia's regulatory authority for urban water supply called the National Water Supply and Sanitation Council (NWASCO) in its annual sector performance report for the fiscal year 2010 to 2011 stated that only 77.5% of the urban population had effective coverage of water services (NWASCO, 2011) which when compared to Kenya at 59%¹ and Uganda at 65%² indicates that the access levels are comparatively high in the region. Notwithstanding however, this figure reveals that an immense challenge to render access to those without effective water service provision still remains when viewed in light of the access³ levels for the previous ten years as depicted in Table 1. These results justify the need for an in depth inquiry to establish why the coverage levels have not been showing a marked upward improvement over the years.

¹ Source: www.wssinfo.org viewed online on 21-11-2013

² Source: www.water.org/Uganda viewed online 21-11-2013

³ Access to water refers to having piped water (from a publicly managed reticulation, borehole or protected spring) available within a housing unit or located within a distance of 200m from a dwelling and without subjecting the occupants of a housing unit to extreme effort when acquiring their household water requirements.

Table 1: Urban water supply coverage in Zambia 2001 to 2011

Fiscal Year	Percentage Coverage	Percentage Coverage to peri-urban areas
2001 to 2002	57%	n/a
2003 to 2004	60%	34.0
2005 to 2006	67.0	37.0
2006 to 2007	68.0	43.0
2007 to 2008	68.6	44.0
2008 to 2009	72.4	not available
2009 to 2010	73.9	not available
2010 to 2011	77.5	not available

Source: NWASCO (2002), (2004), (2006), (2007), (2008), (2009), (2010), (2011)⁴

Appreciable gains were garnered in the early part of the decade largely as a result of the complete overhaul of the urban water supply and sanitation sector effected by the Zambian Government (GRZ) in the late 1990s whereby legislation was passed which provided for the transfer of the urban water service provision mandate from local authorities (LAs) to commercial utilities (CUs) (this institutional restructuring process is dealt with in more detail in Chapter 2). The results shown in Table 1 show that less than 50% of the population in peri-urban areas have adequate access despite the overall urban coverage (includes peri-urban areas) exceeding 75%. The coverage data show that there is a deficiency in the coverage levels to peri-urban areas and therefore brings to the fore the need to probe and establish why this state of affairs is prevalent and suggest possible solutions for redress.

Table 1 highlights the percentage coverage of water supply to sub-components of the urban areas commonly referred to as “peri-urban areas” or “informal settlements”. These areas warrant special attention due to the vast majority of

⁴ Results for peri-urban access levels from 2009 to 2011 not yet compiled by the Regulatory Authority

the urban poor in developing countries such as Zambia residing in these areas. Figure 1 illustrates the slum and non-slum population globally by region whilst Figure 2 illustrates the proportion or percentage of slum dwellers in the world by region. The largest proportions of the slum dwellers in the world are found in Sub Saharan Africa (62%), Southern Asia (35%) and South Eastern Asia (31%). The statistical data indicates that the problems associated with water service provision to peri-urban areas will be most prevalent in Sub Saharan Africa and South East Asia as more than half the urban population in these areas reside in the peri-urban areas. This research therefore focuses on garnering an understanding on how provision of water supply services to peri-urban areas (informal settlements) of Zambia can be swiftly and effectively enhanced.

According to the Zambian government **peri-urban areas** are areas or settlements which grow out of the periphery of formal or planned municipal areas without being subjected to any form of planning control and also lack basic services such as water supply, sewerage and solid waste collection (GRZ, 2001).

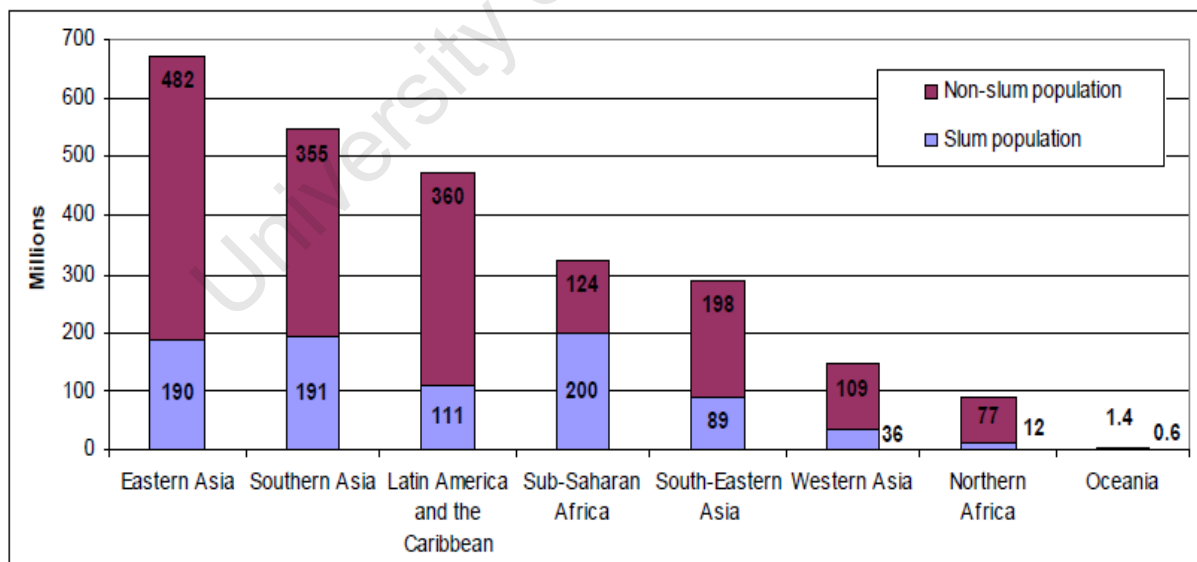


Figure 1: Proportion of slum dwellers in urban population by region. Source: UN (2010)

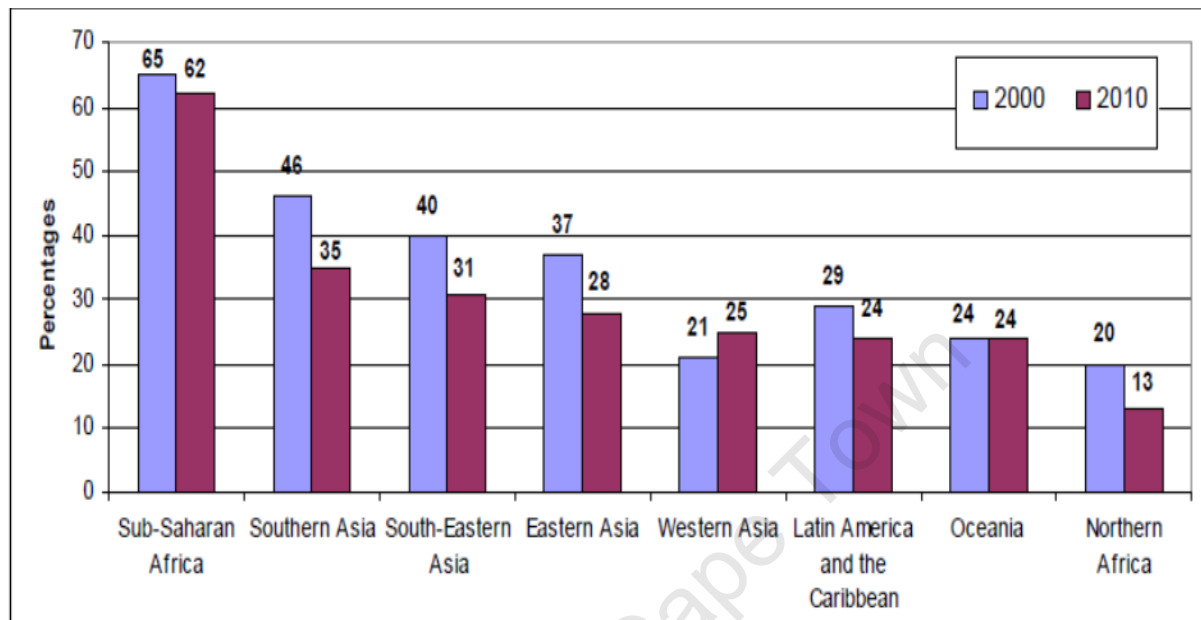


Figure 2: Slum dwellers as a percentage of the urban population by region. Source: UN (2010)

Khalifa (2010) states that the term slum not only suggests indecent and miserable living conditions but also implies other important aspects such as informality which refers to the areas being substandard, illegal or having developed without being subjected to the planning regulations. The definition given by NWASCO/DTF (2005) highlights the aspect of the poverty status of the residents by stating that, peri-urban areas are initially unplanned informal or formal settlements within the jurisdiction of a Local Authority (LA) characterised by a high incidence of poverty and high population density and that these areas lack basic services such as water supply, sewerage, storm-water drainage, roads and solid waste disposal.

The United Nations Human Settlements Programme (UN-HABITAT) an agency established by the United Nations (UN) to promote socially and environmentally sustainable towns and cities refers to slum households as, “a group of individuals

living under the same roof lacking one or more of the following conditions (<http://www.unhabitat.org/documents/> on line June 25th 2008):

- Durable housing of a permanent nature that protects against extreme climate conditions;
- Sufficient living space which means not more than three people sharing the same room;
- Easy access to safe water in sufficient amounts at an affordable price;
- Access to adequate sanitation in the form of a private or public toilet shared by a reasonable number of people; and
- Security of tenure that prevents forced evictions.

From the definitions stated above and the description of the living conditions prevalent in these areas, one can surmise that attributes such as lack of planning, illegality of tenure, insufficiency of land, the usage of poor construction materials, poor construction methods, ***inadequate or no access to acceptable water supply and sanitation services*** are synonymous with these areas.

Out of a total estimated national population of 11 Million persons in Zambia, it has been established that 4.9 Million (45%) reside in urban areas. The distribution of this urban population by housing category is as follows (NWASCO/DTF, 2005):

- 490 000 (or 10%) residing in High Cost Areas;
- 490 000 (or 10%) residing in Low Cost Areas; and
- 3 900 000 (or 80%) residing in Peri-urban Areas.

This distribution is illustrated in Figure 3.

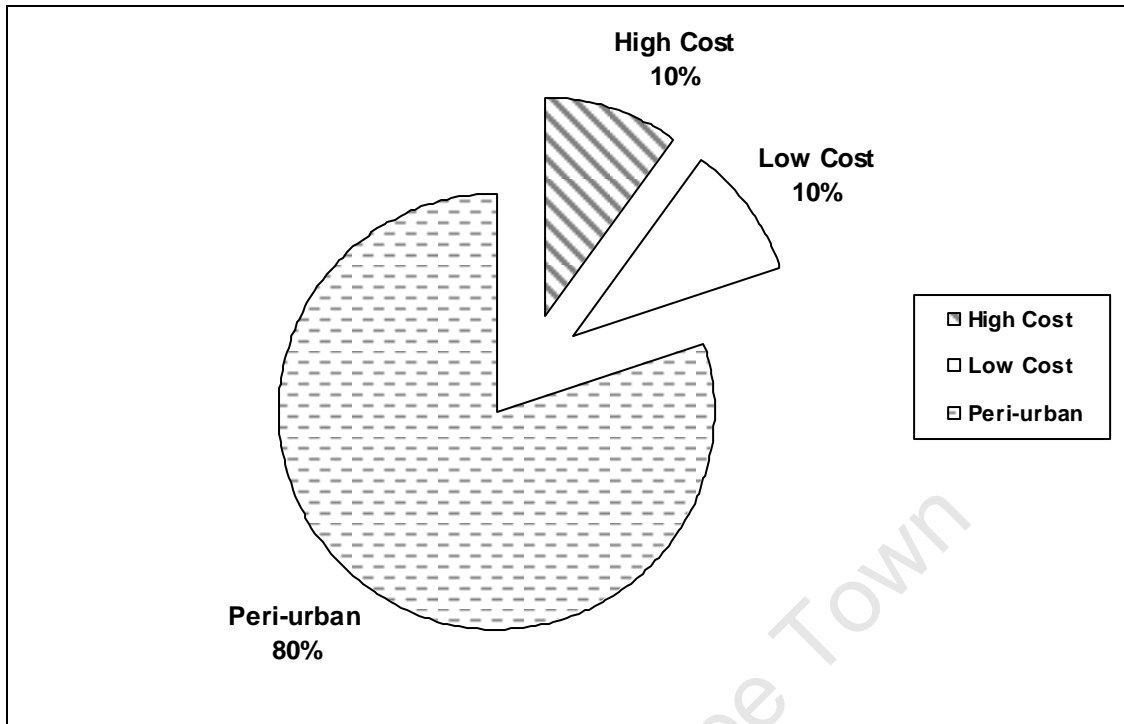


Figure 3: Zambia's urban population distribution by housing category

Access levels to safe water supply⁵ for Zambia's urban areas according to NWASCO/DTF (2005) stand at 60% whilst 40% do not have access which highlights the severity of the problem.

In global terms there are currently about 1.1 billion persons living in developing countries without adequate access to acceptable water supplies (HDR, 2006). A worldwide recognition of this problem was brought to the fore at the United Nations (UN) General Assembly held in New York, United States of America (USA) in September 2000 where the eight Millennium Development Goals (MDGs) were declared. The rationale behind the declaration of these Goals emanated from the intent by all nations worldwide to meet the needs of the world's poorest citizens through improvement of their current living conditions. Goal 7 is most concerned with improvements in water supply and sanitation as

⁵ Safe water supply refers to access from a public stand pipe, with pressurised supply meeting the WHO minimum standards for drinking water (NWASCO, 2002)

its prime focus is on “*ensuring environmental sustainability*”. Within this goal Targets 10 and 11 specifically state that (UN, 2000):

- the population without sustainable access to safe drinking water and basic sanitation should be halved by the year 2015; and
- there must be an improvement in the lives of at least 100million slum dwellers by the year 2020 (from 1990 as the base year).

There is also a direct implication of improved water supply and sanitation provision in the pronouncements of Goal No 1 (eradication of extreme poverty), Goal No 3 (promoting gender equality), Goal No 4 (reducing child mortality) and Goal No 6 (combating HIV/AIDS and other diseases).

UN (2013) reports that the MDG target for drinking water was met five years ahead of schedule as over 2.1 billion persons have had access to improved water supplies since 1990 despite population growth over the period. This gain however is still negated as over 38% of the world’s 6.2 billion persons still do not have a piped water supply direct to their home and have to spend significant amounts of time sourcing the water from public water points which erodes the time they should spend on other economically beneficially activities. Attainment of the objectives outlined for each of these Goals strongly underscore the centrality and importance that good quality water and sanitation provision has on improving the lives of the poor and vulnerable worldwide.

World Bank (2004: p.1) states that, “*there are enormous unmet needs for water supply and sanitation services in developing countries*” and that “*it is estimated that investments must double from the current US \$15 billion to \$30 billion annually to achieve the MDGs for this sector*”. UN (2007) further elaborates that as at 2005, one out of three urban dwellers was living in slum conditions – that is, lacking at least one of the basic conditions of decent housing such as adequate sanitation, improved water supply, durable housing or adequate housing space. Franceys (2008a) in explaining the enormity of this worldwide challenge argues that the rapid expansion of cities and urban sprawl creates large concentrations

of water demand with more limited access to traditional sources, a situation exacerbated by the high potential for pollution of those sources. He underpins his argument in statistical terms stating that 5 billion people shall be expected to live in urban areas worldwide up from 3 billion today. Of this urban population there is an estimated population of 1 billion slum (informal settlement) dwellers which according to UN-HABITAT estimates is expected to double within the next 25 years.

Water service providers ought to therefore develop service delivery mechanisms and approaches that can meet this ever growing challenge if the adverse effects that are brought about by inadequate service provision are to be mitigated. The effects include (HDR, 2006; Sansom et al., 2004a):

- about 1.8 million child deaths each year as a result of diarrhoea i.e. 4900 deaths per day. Combined, unclean water and poor sanitation are the world's second biggest killers of children. Deaths from diarrhoea in 2004 were some six times greater than the average annual deaths in armed conflict for the 1990s;
- the loss of 443 million school days each year due to water related illnesses;
- close to half of all people in developing countries suffering at any given time from a health problem caused by water and sanitation deficiencies;
- procuring their water supplies from mobile vendors whose selling price is several times higher than that of the mandated service provider;
- spending long durations at queues in instances where there are few access points provided by the mandated provider. This time could instead be spent on economically beneficial activities such as gardening, trading, running a small business etc. Young females are especially affected as the long durations they spend on the queues reduces the time and energy they need to diligently apply themselves to their school work; and
- lost education opportunities in childhood leading to poverty in adulthood.

Several factors have been cited by various authorities as being responsible for this state of affairs. These include an inadequate policy and legal framework, ineffective (or a complete lack of) regulation, poor infrastructure, poor management practices by existing providers, lack of investment capital, political interference and non-affordability of the services provided. Finding answers to the various questions that these problems pose requires an exhaustive examination of the existing service delivery mechanisms primarily to verify their level of effectiveness, viability and sustainability.

1.3 The Problem Focus Area

It has been outlined in section 1.2 above that, approximately 40% of the urban poor in Zambia do not have access to adequate water services. This low access level is despite the existence of publicly owned service providers exclusively mandated with this responsibility. Several factors can be cited as being responsible for this gap in service delivery including:

- i) the historical legacy associated with the development of these areas which was biased against the indigenous majority population in that resources for public infrastructure to be used for service delivery were only adequately provided for the minority colonial masters;
- ii) a high incidence of rural to urban migration by the indigenous population group in pursuance of better economic opportunities which in most cases far exceeds the rate of expansion of public service delivery infrastructure;
- iii) political expediency and interference;
- iv) the problems associated with public monopolies;
- v) mobilisation of capital needed for infrastructural development; and
- vi) affordability and cost recovery issues (viability and sustainability).

The enumerated factors suggest that there is an evident deficiency inherent in the existing mode of service delivery. This assertion is supported by the empirical evidence on water access cited in section 1.2 which indicates that there

is a substantial proportion of the urban population that has no adequate access to sustainable water supply. Rodriguez (2004) describes the existent institutional frameworks for public water provision as being characterised by what he terms as a troubling assortment of maladies, conflicting public policy objectives, a lack of consensus on the economic value of water, instability in management, little long term planning, very low efficiencies, high losses, dismal revenue streams, deficient pricing practices and low credit ratings.

It is therefore inevitable that policy makers and implementers investigate and evaluate alternative modes of service provision so as to ascertain their viability, sustainability and suitability, with the ultimate objective if found necessary of completely re-configuring the existent service delivery process.

The problem statement for this research can thus be summarised as follows:

“If the current low access levels to water supply in poor urban communities of Zambia are to be substantially improved, there will be need to explore the applicability of potential alternative modes of service provision which if found suitable, may be employed to redress the existent deficiency in service delivery”

This study will therefore seek to investigate and find answers to the issues posed in the problem statement.

1.4 The Research Objectives

The principal aim of this study shall be to conduct an examination on the existing modes of water service delivery in informal settlements of Zambia and determine their level of effectiveness, viability and sustainability. The specific objectives will be to:

- i) Determine and analyse the impacts of water service provision using public utilities (natural monopolies) to informal settlements in Zambia;
- ii) Ascertain which aspects of the existent policy, legal or institutional frameworks are deficient thereby adversely affecting informal area water service provision;
- iii) Establish as to whether the existing water service delivery mechanisms provide adequate incentives to the existent providers; and
- iv) Recommend potential alternative service delivery mechanisms that could address the existent deficiency water supply provision to the poor urban communities.

The overall research question for this study therefore is:

“why is water service delivery to informal settlements in Zambia not satisfactory in light of the many institutional reforms and how can this anomaly be corrected?”

1.5 The Research Rationale

The need for exploring alternative modes of providing public services such as water supply services to communities in low income areas is necessary in light of the existent low access levels and the adverse socio-economic effects poor service delivery brings to bear. Wolff et al. (2006) supports this position, stating that the existing business models used for providing water services have been changing in key ways to respond to the challenges in the water sector. Several attempts have been made to determine answers to the problem defined in this study and some solutions have been derived already but there still remains an appreciable deficiency in the overall level of service delivery. The existent deficiencies in water service provision to low income settlements therefore justify the need to further explore whether alternative approaches or mechanisms can result in the attainment of improved levels of service provision. Kumar (2011: p.4) underscores and summarises this viewpoint as he states that, “research is

one of the ways of collecting accurate, sound and reliable information about the effectiveness of your interventions, thereby providing you with evidence of its effectiveness. As service providers and professionals, we use techniques and procedures developed by research methodologies to consolidate, improve, develop, refine and advance clinical aspects of our practice to serve our clients better".

1.6 The Study Scope

This study focuses on investigating and garnering an understanding as to why water service delivery to informal settlements is a challenge for mandated water service providers in Zambia and on how this issue can be remedied. Yin (2003: p.1-2) argues that, the case study *"is used in many situations to contribute to our knowledge of individual, group, organisational, social, political and related phenomena"* and that *"it allows investigators to retain the holistic and meaningful characteristics of real life events such as ... organisational and managerial processes"*. Informal area water service delivery predominantly falls within the organisational process domain as described by Yin (2003) and it is clear from the study's objectives that a deeper understanding of how this service is effected and why it is deficient and how it can be improved is the main aim in this research process. Easterby-Smith et al. (2002) supports Yin's viewpoint on case studies as being an appropriate methodology if the area of inquiry is to focus and gain an understanding on the operational aspects of a particular organisation.

To achieve this goal it was imperative that the overall organisational arrangement of the service delivery process was understood both from a contextual and historical perspective (Easterby-Smith et al., 2002). The 'Theoretical and Conceptual Framework Review' (Chapter 2) deals with these aspects. It is acknowledged though at this juncture that the prevalent challenges in informal area water supply in Zambia have come to the fore in the last two decades and therefore developing appropriate solutions which are workable is a relatively new

phenomenon. This standpoint can also be extended to the ever growing challenges that Zambia is experiencing to effectively provide other services in other sectors having similar characteristics such as sewerage and solid waste collection to informal settlements.

It is due to the factors outlined that a methodological approach that is suited to situations where little is known in the area of inquiry from a theoretical perspective is employed. The Grounded Theory methodological approach is methodological approach that is “*most commonly used to generate theory where little is already known, or to provide a fresh slant on existing knowledge*” (Goulding, 2002: p.42). As this research is focussed on Zambia, the Grounded Theory methodological approach is employed using Zambia as the case study. The inherent features of this approach are articulated in more detail in Section 1.7 and Chapter 3 (The Research Methodology).

1.7 Introduction to the Grounded Theory Methodology

The main area of inquiry in this research has been outlined in the preceding sub-sections which is, to increase our general understanding on why water supply provision is deficient in peri-urban areas of Zambia and to explore and develop alternative mechanisms that can be adopted to improve service delivery. To explain this phenomenon, there will be need to develop theoretical insights that explain the developed operational mechanism.

The grounded theory methodology (which principally is a qualitative methodology within the interpretivist research paradigm) developed by two sociologists with different backgrounds in research methods namely Barney G. Glaser and Anselm L. Strauss in 1967 is adopted in this research (Glaser and Strauss, 1967). This methodological approach is anchored on using several types of research techniques in flexible and different ways with the main aim of generating theoretical insights from qualitative data. McGhee et al. (2007: p.2) describe the methodology stating that, “*the essence of grounded theory is the*

inductive-deductive interplay, beginning not with a hypothesis but with a research situation. Researchers start with a topic of interest, collect data and allow ideas to develop”.

It's key central feature is that of **theory emerging** from the data, implying that the approach is **inductive** rather than deductive (Bloor and Wood, 2006; Charmaz, 2006; Goulding, 2002). The processes used in this methodological approach include:

- i) indexing (also referred to as multiple coding) of data according to a number of different analytical categories;
- ii) constant and continuous comparison of data through the development of analytical memos; and
- iii) theoretical sampling which refers to the seeking of pertinent data to develop the emerging theory until theoretical saturation occurs.

Available information that outlines the existent inadequacies in informal settlement water provision in urban areas of Zambia has provided a platform upon which this research has been embarked upon. It is therefore imperative that the literature review exercise in this study is oriented towards a familiarisation with prior research and experiences. This approach is termed as the Straussian view of grounded theory that assumes that, presumptions are unavoidable (Easterby-Smith et al., 2002). This process and the rationale for its selection are described in more detail in Chapter 3.

1.8 Study Limitations

The study examined the problem of inadequate supply of water services by mandated service providers to communities residing in informal settlements of Zambia with a view of determining probable remedies. The domain of inquiry was confined to Zambia using purposively selected commercial utilities and informal settlements. Despite this limitation the findings can be generalised nationwide since the prime characteristics and settings in each of the selected cases are representative of the many inherent features existent in informal

settlements in Zambia. Additionally, the research has revealed that the challenges and recommended solutions for the Zambian sector can serve as a useful platform for examination of similar challenges in other countries having a comparable socio-economic environment.

1.9 Structure of the Thesis

This thesis consists of seven chapters as follows:

Chapter 1 - Introduction and Background: which introduces the research problem, rationale and its contextual setting. The problem of inadequate provision of water supply to informal settlements is briefly reviewed from both a global and local (Zambian) level. The methodological process employed in the research is briefly introduced.

Chapter 2 – Theoretical and Conceptual Framework Review: A detailed review of literature focusing on the various aspects that impact water supply to informal settlements in general and Zambia in particular such as the legal status of informal settlements, viability of service delivery to informal settlements, inadequacy of the existent policy, legal and institutional frameworks and political expediency. It also provides a theoretical and conceptual framework within which this study is anchored. It concludes by identifying several key issues that require further exploration and verification in the study to address the questions posed in Chapter 1.

Chapter 3 – The Research Methodology: This chapter first and foremost outlines the philosophical orientation (or leaning) of the researcher and the methodological paradigm adopted. The research process was ‘classified’ through a detailed articulation of the epistemological and ontological standpoints which culminated in the adoption of a ‘qualitative’ research methodology. It further articulates the rationale behind the adoption of a qualitative methodological approach.

It further explains why the **grounded theory** methodological approach as developed by Barney Glaser and Anselm Strauss was selected and the various

facets that constitute it. It also articulates the two variants of grounded theory namely the Glaserian approach on one hand and the Straussian version on the other. The rationale behind the eventual selection of the Straussian approach in preference to the Glaserian is given together with the various methods employed in the research process namely the focus group discussions, literature reviews and semi-structured interviews with purposively selected informants.

Chapter 4 – Data Presentation: This chapter presents the data collected using the data collection and analysis techniques methods as explained in Chapter 3. The chapter further details the key issues that are central in informal settlement water supply and creates the platform for the analysis of the identified phenomena in the subsequent chapter.

Chapter 5 – Mechanisms of Informal Settlement Water Supply: A Discussion: A detailed discussion and analysis of the key findings are undertaken in this chapter. Each phenomenon is analysed and its implications on informal settlement water supply is presented. The interrelationships amongst the phenomena are articulated after which a proposed model for informal settlement water supply is formulated and presented.

Chapter 6 – Conclusions, Implications and Recommendations: This chapter presents the conclusions, recommendations and their attendant implications arising out of the key findings of this research. Included also are the theoretical propositions for informal settlement water supply in Zambia and a statement on how this study has contributed to the wider body of knowledge. It ends with proposed recommendations for further research and some concluding remarks.

1.10 Summary

This chapter set out to outline the area of investigation, defined the research problem requiring redress and its contextual setting. In addition, it provided a brief overview of the methodological approach employed in this study. The following chapter provides the theoretical and conceptual framework for this area of inquiry.

CHAPTER TWO: THE THEORETICAL AND CONCEPTUAL FRAMEWORK REVIEW

2.1 Introduction

Reviewed in this chapter are both theoretical and empirical literature related to the study under investigation. McGhee et al. (2007) advocate for the early review of literature when using the grounded theory research methodology in a study for the following reasons:

- It stimulates theoretical sensitivity;
- It provides a secondary source of data;
- It stimulates questions;
- It directs theoretical sampling; and
- It provides supplementary validity.

Charmaz (2006) gives counsel on writing a literature review by asserting that, a literature review provides a place to engage the ideas and research in the areas that your grounded theory addresses and that a literature review gives a researcher to fulfil the following objectives:

- to demonstrate the researcher's grasp of relevant works;
- to show the researcher's skill in identifying and discussing the most significant ideas and findings in these works; and
- to prompt the researcher to make explicit and compelling connections between the study and earlier ones.

As this research is primarily focused on garnering an understanding on the most effective approaches to water supply provision in informal settlements of Zambia, it is essential that particular focus is devoted to issues that concern informal settlements such as factors responsible for their development, their legal standing and issues that positively impact or impede satisfactory water service provision. Other issues scrutinised include the policy, legal, institutional and

regulatory frameworks that oversee water supply in these areas in each case identifying the inherent deficiencies that need redress.

2.2 How do informal settlements develop?

Provision of public services such as water supply to informal settlements has continually posed itself as one of the most difficult tasks for those charged with the responsibility of providing the services. Service provision in these areas if available is generally found to be deficient in both access and quality. This assertion is supported by the many pronouncements made at various national, regional and worldwide forums calling for concerted action from national governments, municipal authorities, civil society and the international community in general to help improve the living standards of people residing in informal settlements (GRZ, 2011: p.10). The main issue under consideration at this juncture therefore is to garner an understanding as to how and why informal settlements develop and the resultant effect that this development process brings to bear on the phenomena under investigation.

An understanding of the main challenges associated with service provision to informal settlements will be garnered by firstly reviewing the following key issues:

- how and why they develop;
- their unique characteristics; and
- how these factors affect or impact water service provision by a mandated provider.

The development process is discussed in the proceeding section.

2.2.1 The development process

UN (2003) traces slum development back into the 16th century when there was a rapid influx to the cities of poor migrants looking for jobs. It is obvious that this rapid population influx into the cities generally referred to as **urbanisation**, brought with it a sharp demand for housing. This sudden demand gave rise to new 'landlords' who seized this as a business opportunity to rapidly develop or redevelop cheap poorly constructed sub-standard housing that could be rented

out to the new migrant population. UN (2003) further states that as demand continued to grow, the landlords resorted to renting out their properties 'by the room' which even generated a much higher return but on the other hand adversely impacted the existing living standards due to increased densification. This state of affairs led to some tenants and even owner-occupiers to move out of these areas and seek better accommodation elsewhere citing the apparent 'lowering of living standards in their neighbourhood' as their prime reason for relocating.

As the original set of tenants and 'owner occupiers' left these areas, an opportunity emerged for new landlords who would buy these properties often cheaply and thereafter subject them to further subdivision and 'development' to meet demand for the now often much more poorer new tenants (UN, 2003). Special note should be made on the noticeable absence of the municipal authorities who are responsible for any infrastructural developments such as housing within their area of jurisdiction. This 'absence' obviously served as a strong catalyst for the disorder that is currently prevalent in these areas as they were not subjected to any planning control which ensures adherence to set standards and procedures. Their absence furthermore implies that there is little or no attention given to the issue of provision of vital municipal services such as roads, drainages, water supply and sewerage systems during the development of these areas.

Figure 4 explains and illustrates on how informal settlements develop.

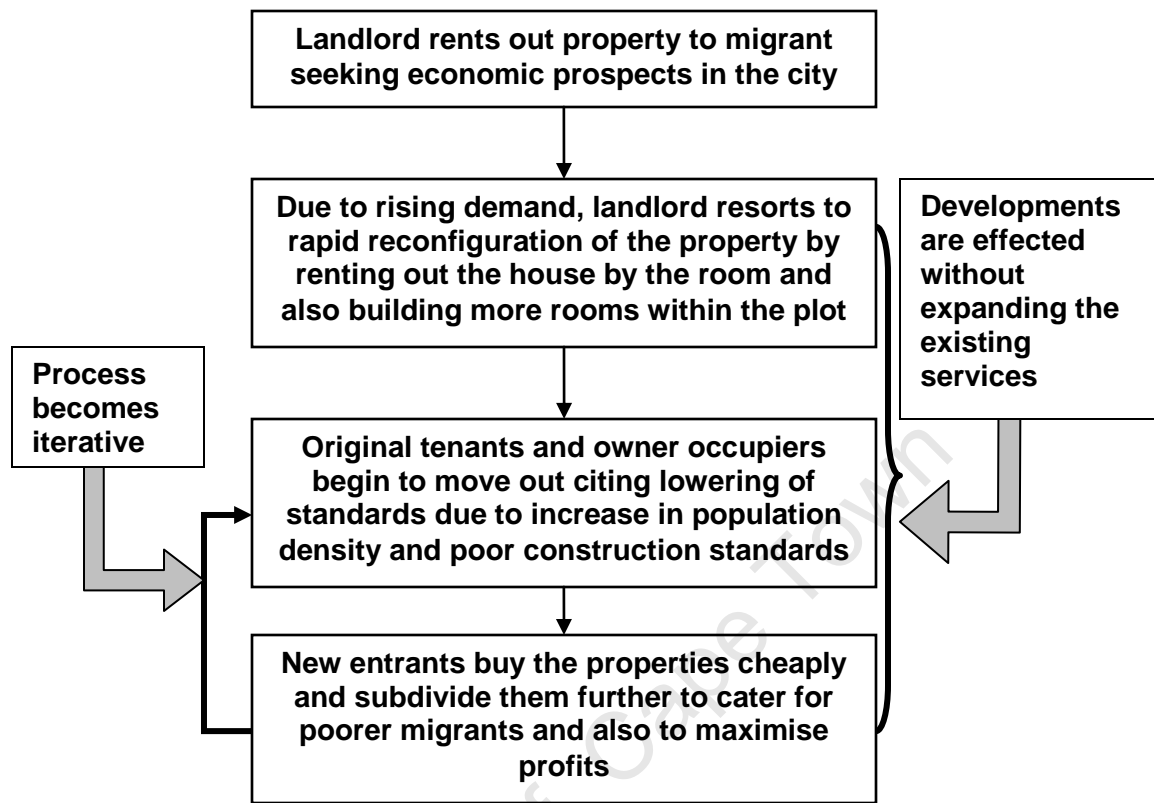


Figure 4: How Informal Settlements (Developed from UN, 2001)

The development process is highly iterative as the same phenomenon repeats itself the only negative factor being increased densification. Urbanisation coupled with several other socio-economic factors has been cited as the main cause for the continued growth of these settlements (UN, 2001).

2.2.2 Informal area development in some African Cities

One major effect of rapid urban growth is the ensuing strain it brings to bear on municipal authorities and other entities mandated to provide services that include water supply, sanitation, health care, municipal waste collection, education and transport to name a few. WUP (2003) reports that, between 1990 and 2025 the total urban population in Africa is expected to grow from 300 to 700 million and by 2020 it is expected that over 50% of the population in African countries will reside in urban areas. It is of fundamental importance therefore that special

attention is given to the formulation of strategies that can help foster the quest for improved and good quality service provision for informal settlement areas.

Housing settlement patterns in most 'cities of the global south'⁶ grew out of a policy that centred around the segregation of the various race groups. The standard of housing and associated services differed in terms of capacity and quality from race group to race group. In Lagos, Nigeria for example, substantial investment was initially availed for water and sanitation infrastructure in the so called 'wealthy enclaves' occupied by the European business and political elite. Efforts to extend the infrastructure to poorer districts occupied by the majority African population were swiftly abandoned in the face of rising costs and in favour of the strategy of segregation (HDR, 2006). The approach was much more forthright in South Africa where segregation was mandated by law under a system called apartheid⁷ whereby those of the black race could not live in the more affluent well serviced 'white race areas'. As a result, very little planned housing areas were constructed for the black African population group ultimately resulting in the growth of many unplanned informal housing areas located within and on the fringes of the large cities (Knight, 2001).

Table 2 below outlines the factors responsible for the development of informal areas in a select number of African cities.

⁶ 'Cities of the global south' refers to countries that do not have fully industrialised economies. Specifically in post-colonial terms it refers to countries that have experienced some form of colonial domination which left a permanent mark on their economic cultural and political landscape (Pieterse, 2008).

⁷ Apartheid was an official policy of racial segregation formerly practiced in the Republic of South Africa involving political, legal and socio-economic segregation against non-whites (www.thefreedictionary.com/apartheid).

Table 2: Examples of Informal Area development in Africa

Name of City	Factors responsible for the development of Informal Areas
Cairo, Egypt	<ul style="list-style-type: none"> • Emerged from small satellite villages whose uncontrolled development was overlooked by the authorities • The 1975 to 1985 oil boom in the Gulf States and the subsequent remittances from the Egyptian workers provided capital for development of large informal areas • Reduced availability of land for new residential areas due to strict control over agricultural to residential land conversion
Durban, South Africa	<ul style="list-style-type: none"> • The current pattern of informal settlement is largely a product of apartheid factors enforced during the second half of the 20th century • The 1913 Land Act alienated Africans from accessing most of the land which forced them to resort to wage employment which was available in the urban areas for survival • There was inadequate housing for the large black population who migrated into urban areas to seek employment
Nairobi, Kenya	<ul style="list-style-type: none"> • The initial development of informal settlements occurred before independence (1963) when the urban housing layout was based on policy of racial segregation. Public resources allocated for the housing and infra-structural needs of the African group were grossly inadequate • The post-independence era abolished the policies that segregated settlement patterns according to race which encouraged high rural to urban migration which was not matched by a corresponding rate of housing provision • City boundaries were extended in the post-independence era to include some formerly rural settlements located on the periphery of the city boundaries. The housing layout and general standard of construction in these areas did not conform to the prescribed standards that were in force in the original city boundary and had no infra-structure through which to provide essential public services such as piped water supply
Abidjan, Cote D'Ivoire	<ul style="list-style-type: none"> • The development of informal settlements is originally attributed to the surge in economic activity brought about due to the setting up of the Abidjan-Niger railway, the opening up of the Vridi canal and deep water port in the 1950s and the establishment of industrial zones • The post-independence era (1960 onwards) encouraged rural populations to seek employment in the urban areas where housing was insufficient
Lusaka, Zambia	<ul style="list-style-type: none"> • Initial pattern of informal settlement development was attributable to a form of apartheid that prior to 1948 did not allow African workers in urban centres to live with their families. This was changed in through the passing of the 1948 African Housing Ordinance that was designed to 'stabilise' the urban population by allowing African workers to live with their families • Informal areas grew largely as a result of the neglect of providing low-cost housing for the large migrant population from the rural areas who were seeking employment • There was little or no insistence on statutory building standards in the post-independence area (1964 onwards)

Source: Compiled using data from UN (2003), the Global Report on Human Settlements

Key features inherent in the development of an informal settlement therefore include (UN, 2001; UN, 2003; Knight, 2001; WUP, 2003; and HDR, 2006):

- i) existence of policies that promulgate housing settlement according to race with very little or no resources allocated for housing and its attendant infrastructural requirements for the racially segregated;
- ii) shortage of land upon which new housing developments can be effected mostly for the poor sections of the population;
- iii) no involvement by the municipal authorities during the settlements initial stages of development;
- iv) illegal acquisition of land upon which the settlement is founded by the informal area inhabitants;
- v) a sudden surge in economic activity that creates demand for a large cadre of unskilled and semi-skilled workers, who would mostly emanate from the rural areas;
- vi) political independence that brings along with it freedom of movement and settlement;
- vii) little or no attention to enforcement of prescribed building standards for housing developments within municipal boundaries; and
- viii) a defective housing policy that does not address the challenges associated with a sudden demand for housing as a result of increased economic activities.

It is clear therefore that effective provision of municipal services such as water supply, sewerage networks, roads, drainage etc. to these areas becomes a technically very complex and challenging task. This assertion is underpinned by the fact that, construction of water and or sewerage networks that comprise pipelines, reservoirs, re-pumping stations and other accessories, demand strict adherence to a prescribed geometric array that takes into account the topography of the area, the ground conditions, the most optimal directions and envisaged capacities, conditions which an unplanned settlement with it's

haphazard housing array does not adhere to. This however does not imply that it is not possible for a municipality to install these networks after the informal area has already developed but the prime challenging issue is that of very costly major alterations such as demolition of large housing segments and other infrastructure not planned for to facilitate passage of drainage channels, roads, water and sewerage lines. This approach also brings with it intricate socio-economic and political challenges such as financial compensation, new land for relocation and general social tension and outcry from the affected persons who will feel grossly disadvantaged.

Redressing the planning and developmental challenges brought about by informal areas were experienced during the so called “Operation Murambatsvina⁸” embarked upon by the Government of Zimbabwe in May 2005 is one such example of a clean-up operation of illegal settlements in urban areas whose official objectives were to rid the cities of illegal dwellings and structures and to clamp down on alleged illicit activities (such as illegal dealing in foreign currency) purported to thrive in these areas (ActionAid, 2005). The exercise was characterised by the rapid demolition of illegal structures and accompanied forced eviction of the occupiers of the demolished structures. The Secretary General of the United Nations appointed a Special Envoy on Human Settlements Issues assess the situation and present recommendations on how the conditions of those affected could be addressed. The Special Envoy established that, close to 700,000 people living in cities across the country, the majority of whom were classified as poor and vulnerable lost either their homes, source of livelihood or both. Other adverse effects identified included (UN, 2005):

- loss of access to food;
- loss of access to their existent levels of water and sanitation;
- disruption to health care access; and

⁸ The English interpretation of “Operation Murambatsvina” is “Operation Restore Order”. International Crisis Group, ICG (2005)

- disruption of access to education.

The Special Envoy's key findings and recommendations were as follows (UN, 2005):

- i) the exercise whilst purporting to target illegal dwellings and structures and to clamp down on alleged illicit activities, was carried out in an indiscriminate and unjustified manner, with indifference to human suffering and in repeated cases with disregard to several provisions of national and international legal frameworks and therefore should be immediately halted;
- ii) the exercise turned out to be a disastrous venture and was based on a set of colonial-era laws and policies that were formerly used as a tool for segregation and exclusion. There was therefore need to suspend and review these outdated laws;
- iii) the humanitarian consequences of the exercise were of catastrophic proportions such that the society as a whole would need several years to recover;
- iv) the Government of Zimbabwe in an effort to facilitate humanitarian operation ought to adopt pro-poor, gender sensitive policy frameworks that provide for security of tenure, affordable housing and access to water and sanitation services; and
- v) the Government of Zimbabwe should revise the outdated Regional Town and Country Planning Act and other relevant legislative instruments so as to align the substance and procedures of these Acts with the social, economic and cultural realities facing the majority of the population, namely the poor.

Lessons learnt from the experiences encountered in several African cities strongly underscore the need for open-mindedness and much innovation to be exhibited by those entrusted with the responsibility for finding solutions to the many challenges prevalent in the informal settlements. The experiences also demonstrate that national governments and municipal authorities ought to firstly adopt a 'prevention is better than cure' stance whereby land for future occupation

and use by prospective settlers is: identified, planned for, distinctly allocated, and where possible serviced beforehand, so as to avert conflicts and social unrest and secondly ensure that there is no political interference in the discharge of duties by the municipal authorities as they should be enabled to freely enforce regulations.

2.3 The Recognition vs. Service Provision Paradox

It has surfaced from the preceding sections that the informal settlements develop devoid of any legal backing and therefore security of tenure on the part of the residents is lacking. Security of tenure is defined as, '*the right of all individuals and groups to effective protection by the state against arbitrary forced evictions. This can be indicated in two ways:*

- *evidence of documentation that can be used as proof of secure tenure status*
- *either de facto or perceived/protection from forced evictions'* (UN, 2003: p.243).

In Zambia for example, this aspect of security of tenure is however made complex by what may be referred to as a form of tacit approval or implied recognition by the authorities due to an inconsistency or conflict in the existing laws whereby one law prohibits informal area development whilst the other provides implied recognition.

2.3.1 The Legal Inconsistency

The Local Government Act of Zambia Cap 281 (GRZ, 1991) for example defines some functions of a local authority as follows;

Section 61(29): *To **prohibit and control the development and use of land and buildings and the erection of buildings**, in the interests of public health, public safety, and the **proper and orderly development** of the area of the council.*

Section 61(30): *To control the **demolition and removal of buildings** and to require the altering, **demolition and removal of buildings** which;*

- a) ***do not conform*** to the plans and specifications in respect thereof approved by the council; and or
- b) ***are a danger*** to public health or public safety

The Town and Country Planning Act Cap 283 (GRZ, 1962) which has one of its provisions stated as “the control of development and subdivision of land” clearly states that:

Section 22(1): *permission shall be required under this part for any development or subdivision of land that is carried out after the appointed day.*

Section 22(4): *in this Act “development” means the carrying out of any building, rebuilding or other works or operations on or under land, or making material changes in the use of land or buildings.*

The intrinsic features of informal housing areas perfectly match the descriptions of developments that are prohibited as prescribed in the laws referred to above as follows:

- i) non-conformance to plans and specifications outlined by the local authority;
- ii) no prior approval from the local authority;
- iii) generally a danger to public health and safety as the housing is not built in accordance with the prescribed specifications for e.g. materials, sewage and refuse removal, storm water collection and disposal, ventilation etc.; and
- iv) their housing array is disorderly and irregular making it difficult for provision of public services.

It is therefore clear from the provisions and descriptions set out in these statutes that the informal housing areas are in contravention of the existing laws and therefore ought not to be allowed to exist. For these reasons it can be argued that the authorities should have prevented their existence in the first place as they had, and have, the legal mandate to do so. It is also within the mandate of the local authorities to proceed and demolish these areas in order to assure compliance with the law.

However, there are other pieces of legislation that provide implied approval for the continued existence of these areas. The Electoral Act (GRZ, 1991a) and the Local Government Elections Act (GRZ, 1991b) are two such instruments which were formulated so as to make provisions and set conditionalities for municipal and national elections. Firstly, there is the aspect of delimitation of a voting area whereby voting boundaries are geographically defined, assigned names, but referred to from a legal perspective as polling districts (GRZ, 1991a; GRZ, 1991b). Secondly, both instruments prescribe the qualifications of an eligible voter as follows:

- a) any person who, at the time when any election is held in any ward under this Act, is registered in a register of voters relating to any polling district in that ward; or*
- b) any established resident of Zambia, who is a rate payer and has resided in the area of that council for a minimum period of three years and who has attained the age of eighteen years.*

The inconsistency therefore has to do with the non-recognition of the informal areas when viewed in terms of the laws that govern infrastructure planning and development whilst the laws that oversee the election into office of politicians give recognition of these areas through the polling districts established across both legal and illegal settlements.

The Zambian experience underscores the reality whereby tacit recognition referred to above will take precedence over adherence to the legal provisions that have been set to ensure compliance with the provisions essential for acceptable planning and development. Generally, governments will more than likely give precedence to any legal provision that can enhance their political advantage as informal settlements will serve as an important and very crucial catchment area from where a large proportion of votes and other forms of mutual support for local and national governments can be derived (UN, 2003).

The lack of convergence therefore between these two well-meaning sets of statutes namely one set overseeing land use, infrastructural planning and development and the other overseeing voting rules and procedures greatly exacerbates the current misunderstanding on the actual legal status of these areas and places municipal authorities in an extremely compromised situation.

2.3.2 The Recognition of Informal Settlements

The Housing (Statutory and Improvement Areas) Act Cap 194 of the laws of Zambia (GRZ, 1975) provides “*for the control and improvement of housing in certain areas and to provide for matters connected with or incidental thereto*”. This law attempts to realign the inconsistencies established between GRZ (1962), GRZ (1991b) on one hand and GRZ (1991a) and GRZ (1991c) on the other. Section 4(1) of GRZ (1975) states that:

The Minister may by statutory order declare any area of land within the jurisdiction of a council to be a Statutory Housing Area, and may at any time thereafter declare that the whole or part of the land comprised in the Statutory Housing Area shall cease to be part of a Statutory Housing Area: Provided that no land shall be declared a Statutory Housing Area unless;

- i) such land is held by the council in fee simple or by way of leasehold grant*
- ii) a plan showing the particulars or details hereinafter mentioned and duly approved by the Surveyor General is deposited by the council with the Surveyor General, the Commissioner of Lands and with the Registrar of Lands and Deeds.*

It further outlines that the plan should show the proposed roads, plot dimensions and areas earmarked for common use which is obviously an effort to bring the illegal settlements in conformity with the planning and development provisions outlined in GRZ (1962) and GRZ (1991).

The Housing (Statutory and Improvement Areas) Act Cap 194 has been used in Zambia to grant legal recognition to the informal areas with eventual provision of

title to the residents. A similar approach has been employed in Brazil where the trend is toward defining a new zoning category for informal settlements that encompasses existing settlements and allows upgrading work to proceed independently of the regularisation of individual property titles (Solo et al., 1993). It is apparent that there is an acceptance and realisation by authorities of the existent social realities that require a humane solution as opposed to opting for outright demolition which is in agreement with the recommendations of the UN Special Envoy on Operation Murambatsvina who observed that the Government of Zimbabwe should first revise the outdated Regional Town and Country Planning Act and other relevant legislative instruments so as to align the substance and procedures of these Acts with the social, economic and cultural realities facing the majority of the population, namely the poor in addition that there should be instituted pro-poor, gender sensitive policy frameworks that will assure security of tenure, affordable housing and access to water and sanitation services (UN, 2005).

2.3.3 Is Water Service Provision to Informal Settlements Legal?

The key question on whether it is legal for a mandated service provider to operate in areas such as informal settlements whose legal status is at variance with the existent laws clearly emerges or put bluntly, should a provider of water services extend their services into an illegal settlement? To answer this question, one needs to review the statute that outlines the functions of a local authority and the practicality of executing these functions. The key principle underlying the functions as outlined in the Local Government Act of Zambia for example is that the functions are applicable to 'the entire area for which the council has been established' implying that all persons within the area shall be entitled to receive the services. Even when viewed from a practical perspective one finds that it would not be possible to provide say solid waste collection and sewage removal services only to recognised areas as the disease epidemics that will arise from the un-serviced illegal areas will adversely impact the so called legal areas within the same district.

This argument will apply even in instances where the water service function is delegated directly to a utility company such as is the case in Uganda. The mandate for water service provision is directly delegated by the government to the utility company namely the National Water and Sewerage Corporation (NWSC) which is different from the institutional arrangement existing in Zambia where the mandate is vested to a local authority who in turn “sub-delegate” it to a commercial utility as illustrated in Figure 5 below.

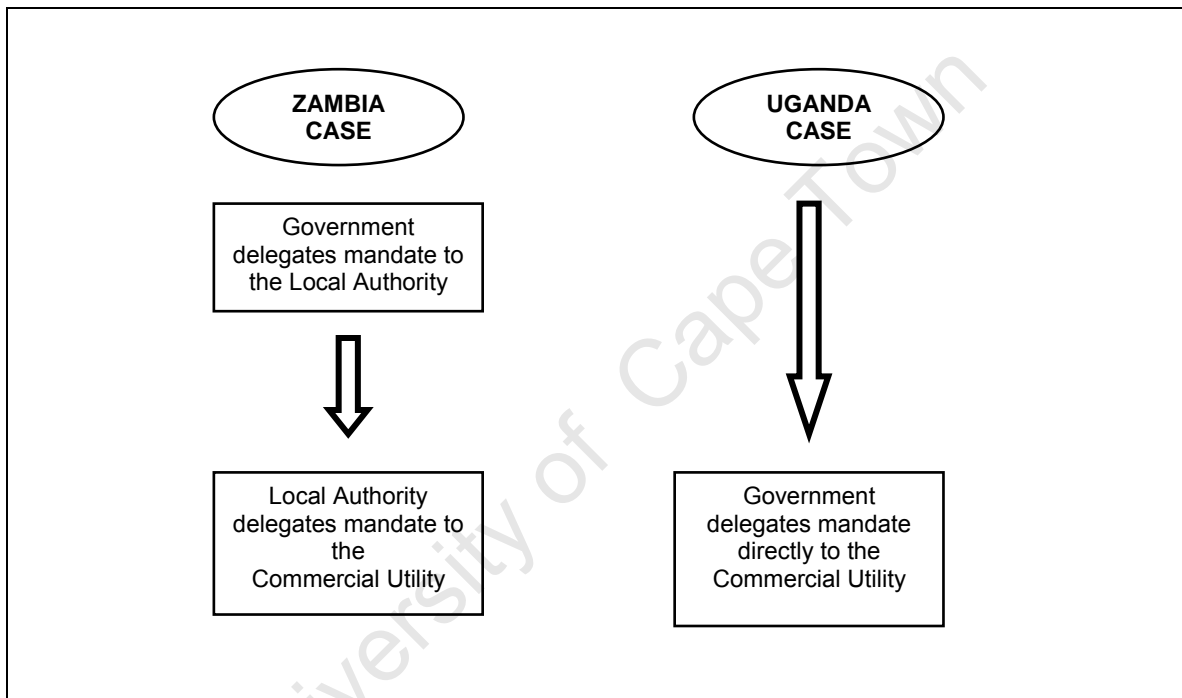


Figure 5: A comparison of delegation of mandate between Zambia and Uganda (by the author)

The NWSC was set up as a Government of Uganda (GOU) statutory entity under decree No. 34 of 1972 which was further strengthened by the NWSC Statute No 7 of 1995. The principal functions of the NWSC under the Statutes are to (GOU, 1972 and GOU, 1995):

- manage water resources in ways which are most beneficial to the people of Uganda;
- render water supply services for domestic, stock, horticultural, industrial, commercial, recreational, environmental and other beneficial uses;

- provide sewerage services, in any area in which it may be appointed to do so under this statute or the water statute of 1995; and
- develop the water and sewerage systems in urban centres and large national institutions throughout the country.

The statutes do not contain a clause that excludes service provision to areas that may be deemed as illegal by the municipalities in which the utility is expected to operate.

The overriding principle therefore is service provision to the entire area as prescribed. It can be concluded that service provision to an informal settlement is not illegal per se, though it is preferable for the responsible authority to grant legal recognition to these areas in order to augment orderly developments that can in turn positively impact activities such as water provision.

2.4 Water Supply to Informal Settlements: A Global Perspective

There is a similarity in the way water is provided to urban areas globally especially amongst developing countries. In this section, factors that have been identified as having both a positive and negative impact are analysed in more detail. These include:

- public water service provision using public utilities that are monopolies;
- the effect of incentives as a catalyst to enhance water service provision to informal settlements;
- the effect of regulation;
- exclusive mandates and political expediency;
- the role of players who are not mandated; and
- affordability and willingness to pay for services rendered.

The factors are evaluated both from a global and Zambian perspective.

2.4.1 The Theory of Market Failure and Public monopolies

A 'monopoly' is defined in the Oxford Advanced Learners Dictionary seventh edition as a situation where a single company or group owns all or completely

controls all the trade in a particular type of goods or the supply of a particular service. Public utilities usually attain this status as a result of government passing legislation that contains clauses that assign the mandate to them exclusively. The question that arises at this juncture has to do with establishing why a government may deliberately intervene in a particular service delivery sector through actions such as the passing of legislation that is exclusive? Winston (2006: p.2) argues that the prime objective behind this kind of government intervention is to arrest the incidence of a condition known as '**market failure**' which he defines as "*an equilibrium allocation of resources that is not Pareto optimal⁹ – the potential causes of which may be market power, natural monopoly, imperfect information, externalities, or public goods*".

Several reasons have been cited as being responsible for market failure occurrence; these include (Munday, 2000):

- the existence of externalities; and
- public goods;

i) Externalities

An externality is said to exist when one individual's action affect the utility of another individual. The externalities are categorised as being either *positive* i.e. those that benefit others or *negative* i.e. those that make others worse off (Cowen, 1999). Negative externalities are prevalent when the **social cost**¹⁰ (i.e. the cost incurred by everybody due to an activity) of an activity is greater than the **private** (or production) costs¹¹ (Munday, 2000).

Negative Externality:

$$\text{Social Cost} > \text{Production Cost}$$

Over-production occurs when there are negative externalities as too many scarce resources are used to produce the goods or services

⁹ Pareto Optimality or Microeconomic Efficiency is achieved when it is impossible to make one person better off without making someone else worse off (Winston, 2006)

¹⁰ The cost incurred by the whole society due to a particular activity

¹¹ The cost of an activity incurred by those directly involved in the activity itself (production cost)

A positive externality is said to be in existence when the social benefit¹² of an activity exceeds the private benefit¹³.

Positive Externality:

Social Benefit > Private Benefit

Under-production occurs when there are positive externalities as the provider only focuses on the private benefits and fails to consider the social benefits which are actually external from the provider's perspective.

ii) Public goods

These are goods that possess the characteristics of **non-excludability** and **non-rivalry** (Munday, 2000; Winston, 2006; Cowen, 1999; Ostrom, et al., 1993).

- Non-excludability means that it is impossible to prevent non-paying individuals from enjoying the benefits of a good or service. Examples of non-excludable goods include a national defence system, street lighting and a shipping lighthouse.
- Non-rivalrous implies that nobody's consumption lowers another person's benefits. Goods considered to possess some degree of non-rivalrous consumption include communication and water supply services. They are considered not to be fully non-rivalrous as one person's consumption does not lower another person's consumption up and until saturation or overcrowding occurs which triggers a market failure condition. Public goods such as water supply provision should therefore be classified as mixed or impure.

The main problem with public goods provision is that since it is very complex and costly to exclude those that enjoy the benefits and are not willing to bear the cost of its provision (also referred to as **free-riders**), there is a likelihood that those providing the service will **under-produce** or **undersupply** which is very applicable in the case of private entrepreneurs. This phenomenon explains why most public goods which are principally aimed at enhancing social welfare are

¹² The benefit to the whole society received through the activity

¹³ The benefit received by those directly involved in the activity

generally provided by governments or their appointed agents using tax revenues as their main source of financing (Winston, 2006; Cowen, 1999). The Government of Zambia for instance, passed the Water Supply and Sanitation Act no 28 of 1997 in which exclusive overall responsibility for water supply and sanitation services was given to newly formed public utilities making them assume the status of agents as they acted for, and on behalf of the various local authorities. **Natural monopolies** were created thus as a direct output of the exclusive mandate clause.

There is a contrary view however that asserts that although this approach has noble intentions in as far as improving service delivery, it still brings with it many inherent problems. Connors (2007: p.23) supports this position arguing that, *“the combination of the state ownership and monopoly has weakened the incentives for good performance by government agencies”*. Gerlach (2008: p.44) cites exclusivity clauses as being counterproductive and could end up stifling the innovation needed in order to devise and implement options that can be used to effectively provide services to the poor. WUP (2003: p.85) concurs with Gerlach (2008) explaining that, *“while exclusivity may help to meet financial objectives in practice most utilities have failed to meet the needs of all consumers in their service areas”*. Kayaga and Franceys (1998) add to this debate stating that, *“most water utilities in Africa are still managed in the traditional civil service style, with little emphasis on the customers”*. In describing some of the natural tendencies of monopolies Sherman (1990) states that, in their quest to raise revenues monopolies tend to resort to raising prices as there is no competition and that reliability of service provision is at risk unless there is a clear mechanism in place that defines quality and monitors it. His argument appears to emphasise the importance of competition as opposed to exclusivity and its ability to positively influence socially desirable outcomes in the public service provision.

The key question that needs to be answered in light of these government interventions is on whether or not the government policy to correct market failure

has been successful or not? In answer to this question Winston (2006) identifies three main considerations:

- i) whether a government has any reason to intervene in a market i.e. is there any evidence of a serious market failure to correct?
- ii) whether the government policy is at least improving market performance i.e. is it reducing economic inefficiency? and
- iii) whether the government policy is optimal i.e. is it efficiently correcting the market failure and maximising economic welfare?

In the arena of water supply to informal settlements across the developing world, existent empirical evidence such as that disseminated at the UN General Assembly held in New York in September 2000 strongly underscore the urgent need for radical interventions by policy makers and governments to be effected if accessibility levels are to be substantially improved. A state of affairs that has over 1.1 billion persons living in developing countries without adequate access to water supplies is certainly a condition of market failure (HDR, 2006). The issue on whether (or to what extent) the government policy is reducing economic inefficiency can only be answered after a new policy framework is developed, implemented and empirical evidence collected to ascertain the overall effectiveness of the policy. In Zambia for example, appreciable gains in access to water supply were achieved after a new policy framework was passed and implemented (ref figure 1). A well-articulated policy framework encourages a much more focussed approach on a sector previously not given much attention such as water services provision. However, after ten years of the policy's existence, the growth trend has exhibited signs of stagnation which may point to inadequacies in the current service delivery mechanisms (NWASCO, 2002-8).

The results may suggest that the policies adopted by the Zambian Government have only partially been successful hence requiring some measure of review which should principally focus on the areas where results were unsatisfactory. It can be argued that the adopted policy framework did yield some semblance of market failure correction in that access levels to water supply in informal

settlements exhibited a measure of improvement. However, the stagnation still being experienced overall reveals or points to the likelihood of a new phenomenon having come into existence known as **government failure**. Winston (2006) describes this as a condition that arises when government in its quest to remedy a market failure condition instead creates or enhances inefficiencies in service delivery. These two scenarios are summarised by Ostrom et al. (1993) who stated that market failure necessitates the need for government intervention whilst government failure necessitates the need for privatisation as in Figure 6 below:

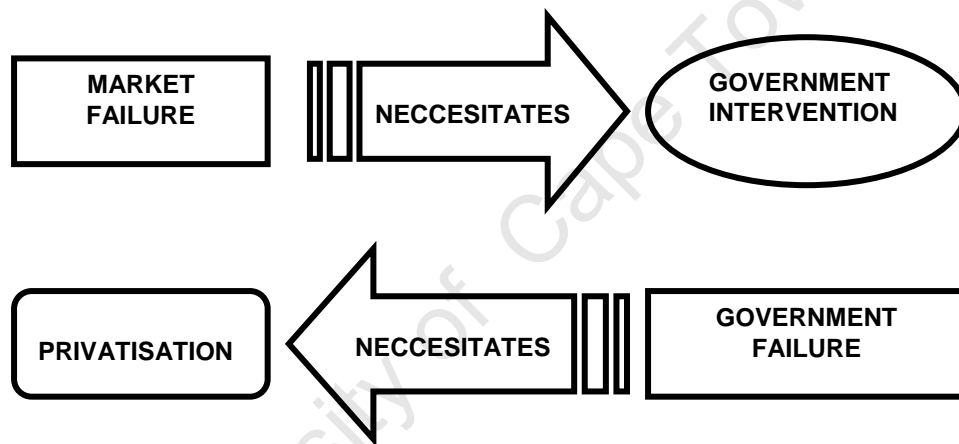


Figure 6: The Market failure vs. Government failure paradox (Munday 2000; Winston 2006)

Answers to these questions from a Zambian perspective shall be derived in the section to follow later that dwells on the policy framework governing water supply to informal settlements in Zambia. It is however evident that the existence of a market failure condition necessitates some form or degree of government intervention if service delivery for the disadvantaged is to be assured as illustrated in Figure 6. Ostrom et al. (1993) argue that the probable curative actions may include a complete overhaul of the existing legislative, institutional and regulatory frameworks together with a radical change in the existing management approach.

The exercise of direct intervention to correct a market failure in order to improve service provision to the majority poor of course necessitates a re-evaluation of the existent service delivery mechanisms. Prahalad (2005) gave a new outlook to the on-going debate on providing services to the poor by asserting that, the low income population group markets ought to make us challenge the existing paradigms, through for example, changing the way products and services are currently designed and packaged in order to take into account the skill levels and existent poor infrastructure prevalent amongst the low income groups. Kayaga and Franceys (2001: p.237) are in agreement with the standpoint taken by Prahalad stating that, *“in order to improve service provision to the urban poor drastically, there must be institutional and technological innovations”*. Therefore the case for new innovative service delivery mechanisms remains essentially imperative. In conclusion several issues arise:

- i) was it fundamentally essential for the Government of Zambia to correct the existent condition of market failure (as the current levels of urban water service delivery in the country are not efficient) triggered primarily by exclusive service delivery mandates (public monopolies)?
- ii) did the exercise yield the desired results? and
- iii) if the government failure condition has been borne out of the market failure correction exercise, what counteractive actions should be instituted by the policy makers to assure access level improvements to water supply by the poor and a general good quality level of service?

The phenomenon that emerges in (iii) validates the rationale for undertaking this research which is to principally verify and establish whether the existing modes of water service delivery in informal settlements of Zambia are currently effective, viable and sustainable and also to establish if any alternative viable options can be employed effectively.

2.4.2 Are there adequate incentives for public service providers?

Winston (2006) contends that the existence of a market failure condition can be attributable to factors such as, market power, natural monopoly, imperfect information and several other complexities associated with public goods

provision. As this research is principally aimed at establishing how water supply service provision to those residing in informal settlements of Zambia can be enhanced, it follows therefore that a review be done on one very key issue that has a bearing on how a mandated provider or his agent would operate, the issue of incentives. The following key questions arise:

- i) Are the publicly owned utilities sufficiently incentivised to render an acceptable level of service to informal settlement populations in light of the generally held perception that service to these areas is not profitable? And
- ii) Would the utilities in the absence of a legal mandate (which compels them to provide services to informal settlements) venture voluntarily into these areas?

From an economic standpoint it can be suggested that publicly owned service providers for water to informal settlements will have adequate incentives to provide the required level of services if their expected revenue returns will be greater than the operational costs. In support of this assertion, Sherman (1990) points out that, the incentives that might be created in the monopoly firm will depend in part on whether it is privately or publicly owned and that despite private ownership of the means of production raising many kinds of issues, there is general unanimity that a strong co-relation exists between the 'seeking or generation of profits' and the 'availing of strong incentives' to the service provider. In balancing his argument on this issue, Sherman (1990) on the other hand admits that there will be less strong or less narrow incentives in institutions charged with responsibility of rendering service to the public and that this situation may sometimes be preferable giving the following reasons:

- when the goals and purposes are many and diffuse, a bureaucracy of professional staff may serve better as their self-interest is less apt to interfere with institutional objectives, hence assuring good levels of service quality; and
- a publicly owned enterprise which is devoted to a well-defined purpose may accomplish desired goals such as pricing at marginal cost or

redistributing income through pricing policies which a private enterprise may find difficult to pursue.

It is evident so far from the arguments posed that incentives are existent amongst all the different service delivery styles; public or private.

Clarification ought to be sought therefore on whether there are sufficient positive returns that a provider can accrue during water service delivery to informal settlements with an exclusive mandate. Another dimension on the issue of incentives would be to verify as to which entity actually possesses the largest proportion of incentives in this service delivery approach; is it solely the utility, is it the government or both? It is also essential to ascertain whether other players apart from the publicly owned utility and government as the bearer of overall responsibility would be incentivised to provide water services to informal settlements.

2.4.3 Regulation

A **regulation** can be termed as an official rule made by an authority such as government, chiefdom, local municipality, educational institution etc. in order to achieve certain specific objectives. A **regulator** will in this case be an organisation or person who enforces the set rules and ensures fairness. Gerlach and Franceys (2008) assert that the term 'regulation' is used at different levels of generality and its precise definition differs from discipline to discipline but is usually understood to refer to different forms of government intervention into society or, more specifically, market-based activities to induce or curtail certain types of behaviour in public interest.

Sherman (1990, p.17) posits that, '*regulation seeks the same outcome that an ideally functioning market can achieve*' and that, '*it is usually undertaken where markets do not function in the ideal way*'. Regulatory intervention has evolved over the last hundred years mainly as a result of the many private companies that were involved in the monopoly provision of public services such as water, gas and electricity whom it was noticed began to accumulate excessive profits

coupled with declining standards and a tendency to generally abuse their service provision mandate. It was essential therefore for some form of intervention in order to assure customer protection, price controls and adherence to high level service standards (WEDC, 2002). Regulation of public goods providers on the global-front, has usually been effected by a government ministry or a regulatory commission, however there is still much continual development required on issues that have an important bearing on the overall regulatory framework such as the existent legal statutes which in most cases are found to be still very new (Sherman, 1990).

Estache (2005) explains regulation of water service provision for the urban poor as a mechanism to assure service provision at the lowest possible cost and also to ensure that the resultant savings are shared with the beneficiaries and also that effective regulation requires effective regulatory tools and effective skills. The key issues that emerge from this definition of regulation for water service provision for the poor are:

- i) institution of incentives that can assure provision of service at lowest cost;
- ii) redistribution of the savings accrued through efficient service provision with all customers within the category; and
- iii) ensuring that there is adequate provision of water;

The question that needs to be answered at this juncture is to establish which factors make the regulation of water supply to informal areas feasible?

It can be argued that services that are regarded as essential and important for public welfare should be subjected to some form of government scrutiny and control. Examples of sectors where this would be applicable include education, health services, water supply services, electricity, telecommunication, and transportation. For sectors such as electricity, telecommunication and water supply and sanitation, provision is usually rendered by public utilities which tend to be monopolistic (Gerlach and Franceys, 2008). Generally, efficient provision of these services requires one or a few number of suppliers primarily due to the

large capital outlay (economies of scale) required for the infrastructure e.g. a city or even a small sized community can only accommodate a limited array of water supply or sewerage network piping. It is not practicable to have several service lines provided by various providers within the same vicinity.

Gerlach and Franceys (2008) and Winston (2006) advocate for the safe guarding of public interest, improving of consumer welfare and prevention of monopoly abuse as some of the most prominent rationales for regulatory intervention to oversee activities within the sector. Other rationales include (Gerlach and Franceys, 2008a; Winston, 2006; NWASCO, 2002):

- i) it can act as a check to control the profit seeking behaviour of service providers and also protect customers from inefficient and or low standards of service;
- ii) it can enforce compliance by the providers to the minimum set standards for service provision;
- iii) it can provide customers with access to vital information regarding the services they are receiving on aspects such as general standards, quality, and their rights;
- iv) it can assure fairness in the overall pricing regime;
- v) it can build in mechanisms that can assure an acceptable minimum level of service for the poor and vulnerable; and
- vi) to counter interference by the politicians and well-connected bureaucrats who can easily distort and corrupt the service delivery arena.

Additionally, Gerlach (2008) supports the view that requires regulators to possess specialist skills to enable them effectively regulate service provision to the poor and vulnerable since their needs are unique and also because regulators are rarely mandated to protect poor customers. The regulatory practices encountered in Zambia are explained in the subsequent sections.

2.4.4 Willingness to pay and cost recovery issues

It is a widely held view that, low or poor cost recovery will negatively affect the quest to provide good quality water services. WUP (2003) points out that a pro-poor pricing policy is an important instrument for improving services to the urban poor and that it may be used to:

- improve affordability across a number of urban centres;
- raise financing for network extension; and
- subsidise connections.

In addition to the points enumerated in WUP (2003), a lack of a poor pricing policy can adversely impact the infrastructure used to provide the services as there is a likelihood of there being insufficient funds for maintenance which deters sustainability. Ostrom et al. (1993) are in agreement with this position as they point out that infrastructure will deteriorate when resources are insufficient. In support of this claim they referred to a USAID evaluation of irrigation projects conducted in 1983 which concluded that, the effective productive life of irrigation infrastructure is limited more often by the internal rates of return in the project which might indicate poor design, environmental degradation, a lack of operational skills and inadequate preventive maintenance.

There are several reasons that are blamed for low cost recovery rates. These include an unrealistic tariff structure which pays no attention to the costs of production and the inability by the providers to collect revenue especially in the so called informal settlements. Strand (2000) in his analysis of the water pricing policy in the capital of Honduras, Tegucigalpa found that, the publicly owned utility called SANA'A provided an inferior level of service in the poorer sections of the city as compared to the more affluent sections. Reasons attributed to this include the fact that the water tariffs were prescribed by a government regulatory authority whose main defence for this adopted stance was that, since water was a basic necessity it should therefore be made affordable to all with absolutely no regard to key aspects such as cost recovery which assures sustainability. Strand (2000) established that the low prices provided few incentives for SANA'A to

collect the revenues accrued from this category of customers as the amounts were excessively low. This impacted negatively on those potential customers in poor areas who wanted to be connected to the network as SANA'A cited inadequate resources as the main inhibiting factor. The inability to expand the service areas due to inadequate resources partly due to poor revenue collection by the service provider (as was the case with SANA'A), is in tandem with the statement by Kayaga and Franceys (1998: p.183) that, *"many African water utilities do not even collect all the money billed for, leading to the ever-increasing arrears. As a result of the above-mentioned factors, these water utilities are too cash strapped to maintain the existing infrastructure, let alone improve service levels"*.

The reasons forwarded by SANA'A are at great variance with findings from several studies that have actually shown that, the poor actually pay several times more than the prescribed tariffs due to scarcity of the commodity and that, there is a growing ability and willingness amongst the poor to pay for water supply and sanitation services so long as the utility companies are run along commercial lines (Kayaga and Franceys,1998). Other findings have established that, the urban poor are subjected to exploitation by private vendors also referred to as Small Scale Independent Providers (SSIP), who taking advantage of the shortage; deliver water drawn from various sources to the residents of poor communities at highly inflated prices. Both Strand (2000) and Connors (2007) observed that low income households with no access to piped water supply pay a higher price than higher-income groups households that have uninhibited access. A similar observation was made by GKW Consult (2005: p.7) who reported that, *"in the informal settlements of Kampala-Uganda and the peri-urban areas of Lusaka-Zambia, kiosk customers pay 2 to 9 times as much for a cubic meter of water as compared to residents of formal residential areas who have access to house connections"* and that *"in Dar Es Salaam and Ouagadougou water resellers who deliver water at their customers doorstep, charge a tariff which is 5 to 15 times higher than the domestic tariff"*. These findings

demonstrate that there is a potential market in these areas since they are **willing to pay** a much **higher price** for a very scarce but crucial commodity. Prahalad (2005: p.1) who agreed with the position that there is a large market potential amongst the poor made this proposition which strongly concurs with the observation made by GKW Consult (2005: p.7) by stating that:

“If we stop thinking of the poor as victims or as a burden and start recognising them as resilient and creative entrepreneurs and value conscious consumers, a whole new world of opportunity will open up”.

Both statements advocate for a new approach and outlook to issues regarding service provision amongst the so called poor in society who predominately reside in informal settlements where there is immense business potential so long as viable and appropriate mechanisms are devised.

2.5 Water Supply to Zambia’s Informal Settlements: A Situational Analysis

There are many issues that require analysis if a full appreciation of how water is presently supplied to the informal settlements in Zambia is to be substantially enhanced. The identified issues include:

- i) the impacts (from a holistic perspective) realised after the reformation of the water sector;
- ii) the new policy framework;
- iii) the new legal framework;
- iv) the new institutional framework;
- v) the new regulatory framework; and
- vi) the role and performance of the various players directly involved in the provision of water services to informal settlements such as commercial utilities and community based providers.

This section therefore specifically deals with these and other closely related factors that have both a direct and indirect bearing on water service provision to the informal areas.

2.5.1 The Reformation of the Water Sector in Zambia: A Paradigm Shift?

In the early 1990's, the Government of Zambia acknowledged that the State and the mode of public provision of water services needed a major overhaul in order to make it more responsive to the population's needs (GRZ, 1994). The acknowledgement by government of the need to effect reforms to the sector came after several previous, but failed attempts. NWASCO (2004) and GRZ (1994) both note that attempts to reform the water sector began as early as 1979 when a recommendation was made to government to "hive off" the water service responsibility from the local authorities through the establishment of a National Water Authority. This proposal was not implemented as it was argued that the proposed institutional arrangement would not be in tandem with the decentralisation policy in effect at the time. Similar but unsuccessful attempts were made in 1984 and 1985.

Progress in effecting reforms for the sector were garnered after a change of government in 1991 when the one-party system which had its leanings more towards a socialist style was replaced by a multi-party type of government. The policies introduced by the new government included the liberalisation of the economy where market forces were to dictate the pace at which the economy was to move and effecting of wholesome reforms to the entire public service management system (NWASCO, 2004). The reforms to the water sector were therefore part of a much wider reformation of the way government intended to provide services to the public in all sectors.

The reform process of the water sector which was embarked on by government in 1994, consisted of wide stakeholder and public consultation on matters that affected the water supply and sanitation sector, which culminated in the formulation of several proposals that would impact the existing policy framework. Prior to the reform process, responsibility for public water provision was fully

vested in local authorities who were poorly managed as evidenced by (NWASCO, 2004):

- unqualified management;
- overstaffing;
- little or no attention to maintenance of the existing infrastructure;
- inadequate resources to expand the existing networks in order to match the ever growing urban population; and
- poor levels of cost recovery for services provided.

NWASCO (2004) and GRZ (1994) identify the following problems in Zambia's water sector prior to embarking on the reform process:

- lack of a comprehensive sector policy or strategy to guide sector organisations in the performance of their tasks;
- unclear roles and responsibilities for the water sector leading either to duplication of efforts or gaps in some areas;
- deteriorating infrastructure as a result of poor maintenance and lack of new investments, with most of the investment being provided by external support agencies;
- unsustainability of existing water supply schemes resulting from the perception of water as a "cost-free" social good rather than an economic one;
- erratic and insufficient funding from central government with little impact of government institutions (e.g. local authorities) on the ground;
- lack of stakeholder involvement and ownership by consumers and users;
- increasing pollution of water resources among other environmental problems, particularly in the mining areas; and
- a non-existence of a comprehensive framework for managing water i.e. there was no clearly articulated sector policy on water resource management and water supply and sanitation.

These reforms therefore, were initiated in order to address these and other problems that adversely affected the sector as a whole.

In a quest to reorganise the water sector so as to improve the level of service delivery, seven principles upon which the reorganisation process was to be anchored were adopted by the Government of Zambia. The principles were developed to respond to the main challenges that had been identified as being responsible for the general ineffectiveness of the sector. The principles are as outlined in Table 3 below (GRZ, 1994).

Table 3: The Sector Principles

Principle	Statement
Principle 1	Separation of water resources functions from that of water supply and sanitation
Principle 2	Separation of regulatory and executive functions within the water supply and sanitation sector
Principle 3	Devolution of authority to local authorities and private enterprises
Principle 4	Achievement of full cost recovery for the water supply and sanitation services (capital recovery, operation and maintenance) through user charges in the long run
Principle 5	Human resources development leading to more effective institutions
Principle 6	Technology appropriate to local conditions
Principle 7	Increased government spending priority and budget spending to the sector

Source: Compiled from (GRZ, 1994)

The key outputs of the reform process included the following (GRZ, 1994; NWASCO, 2004):

- i) a revised policy framework;
- ii) a new legal framework;
- iii) a revised institutional framework; and
- iv) a revised regulatory framework.

Each of these aspects is elaborated in more detail in the subsequent sections.

It follows therefore that, the transformation brought about as a direct result of the reform exercise in Zambia's water sector is what Kuhn (1970) refers to as a

'paradigm shift', as it was essentially a move away from an existing way of practice to another which was principally intended to realise marked improvements in urban water service delivery.

2.5.2 The Policy Framework

One major output of the reform process was the passing of a new policy framework for the water sector called the National Water Policy (NWP). The principal objective of this policy was:

“to promote a sustainable water resources development with a view to facilitate an equitable provision of adequate quantity and quality of water for all competing groups of users at acceptable costs and ensuring security of supply under varying conditions. This entails establishing a well-defined institutional structure that will achieve the intended policy objectives” (GRZ, 1994: p.14)

It is in the NWP document that all the major pronouncements that arose from the reform process were articulated. The main pronouncements that impacted the urban water supply and sanitation service provision were the “seven sector principles” which have been stated in Table 3. The underlying objectives behind each of these principles are summarised in Table 4.

Table 4: The Sector Principles-Objectives and Implications (GRZ, 1994)

Principle	Objective and Implication
Separation of water resource management from water supply and sanitation	Combination of these roles stifled progress gains in each of these very critical functions. A clear distinction between these two functions was necessary so that each function was to receive much more detailed attention
Separation of regulatory and executive functions within the water supply and sanitation sector	There was need to “hive-off” the regulatory function which was vested in the government to an independent statutory body, which would enhance fairness, eliminate government bias and generally assure good governance. It also advocates for the confinement of government’s role to that of policy formulation and implementation
Devolution of authority to local authorities and private enterprises	The legal framework did provide for devolution of authority to local authorities. However it did not allow local authorities to enter into service provision arrangements or partnerships with the private sector. This principle advocates for the further devolvement of service provision authority from the local authorities to the private sector whom it is envisaged can enhance overall operational efficiency
Achievement of full cost recovery for the water supply and sanitation services (capital recovery, operation and maintenance) through user charges in the long run	This principle advocated for the institution of cost reflective tariffs that would assure operational sustainability for the sector. The direct implication was that water service provision could no longer be provided as a free social service to consumers
Human resources development leading to more effective institutions	It was acknowledged that improved service provision required better qualified manpower. The principle therefore advocated for specific attention to be given to training and capacity building of existing and potential human resources who would augment management levels in the organisations mandated to provide services
Technology appropriate to local conditions	Sustainability of service provision would be assured and enhanced if technology suitable to local conditions was utilised.
Increased government spending priority and budget spending to the sector	It was acknowledged that government needed to provide more resources to trigger improved service provision

As regards water supply to informal areas, the NWP is silent on specific pronouncements that prescribe how water supply can be improved in informal settlements in light of the existent low access levels (see Table 1 on page 2) and the unique characteristics of these areas. This standpoint is in agreement with WUP (2003: p.79) where it is reported that, *“in the context of increasing urbanisation, rapid growth of informal settlements and rising levels of urban poverty, it is essential that utilities, national and local governments develop coherent policies for water supply and sanitation that explicitly target the poor”*. Furthermore, the NWP should have contained strategies that deal with critical accompanying aspects such as resource needs and future roles and responsibilities of the various stakeholders within the informal settlement service delivery arena.

The shortcomings identified in the NWP appear to support the view that the problem of inadequate service delivery which includes water service provision in these areas has been exacerbated by the policy makers themselves as they did not render specific attention to address the many unique and complex issues that are prevalent in informal settlements taking into account that the development of these areas is a relatively new phenomenon (post-independence) in most parts of Sub-Saharan Africa. Questions that arise in light of these observations include:

- i) Was the apparent omission in the NWP due to a lack of appreciation and understanding of the challenges inherent in informal settlements?
- ii) Can the existent deficiency in service provision to informal settlements be solely attributed to a deficient policy framework?
- iii) Should policy makers always give special treatment to matters concerning service provision to informal settlements?

A clearer picture shall emerge after the legal, institutional and regulatory frameworks are reviewed and an overarching analysis of water provision to

informal settlements of Zambia is articulated in the subsequent sections of this chapter.

2.5.3 The Legal Framework

Provision of water supply to urban areas of Zambia is governed by three main legislative instruments as shown in Figure 7 below. It is important to note that prior to the effecting of the water reforms, only the Constitution and the Local Government Act (GRZ, 1991b) were in existence. The Water Supply and Sanitation Act (GRZ, 1997) was a direct output of the reform process i.e. it was enacted “pursuant” or to augment the Local Government Act for the sole purpose of enriching it. The key legal instruments that oversee urban water supply and sanitation in Zambia are illustrated in Figure 7 below.

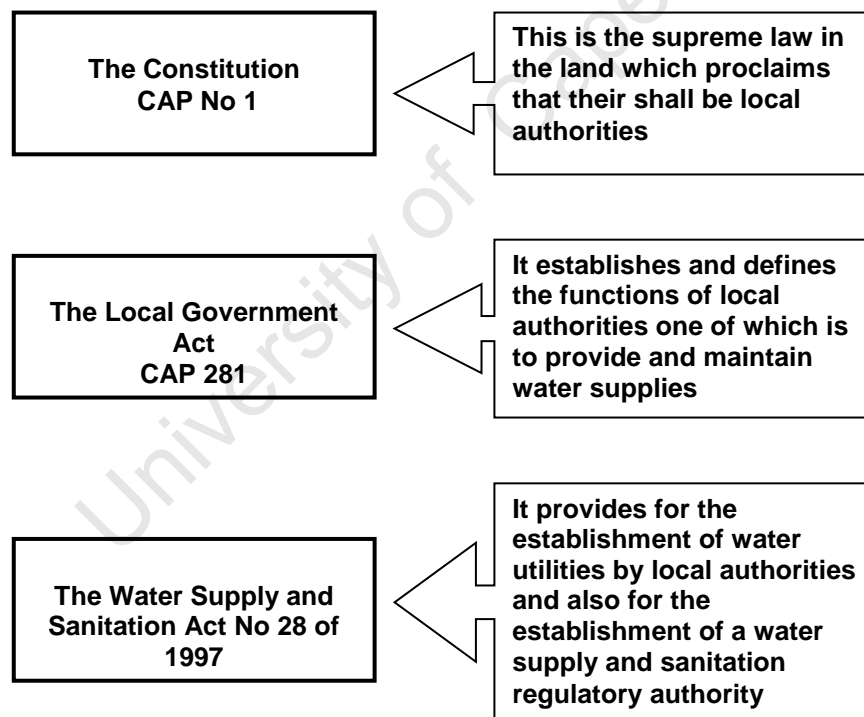


Figure 7: The key legal instruments that govern urban water supply in Zambia (GRZ, 1991b and GRZ, 1997)

i) The Constitution Cap No 1

This is the supreme law in the land which states in section 109(1) that; *“there shall be a system of local government in Zambia as may be prescribed by an Act of Parliament”*.

ii) The Local Government Act Cap 281

It establishes and defines the functions of local authorities. Section 61 states that a council (local authority) may discharge all or any of the functions set out in the second schedule. Section 60 of the second schedule outlines one of the functions thus; *“to provide and maintain supplies of water and, for that purpose, to establish and maintain waterworks¹⁴ and mains¹⁵”*.

iii) The Water Supply and Sanitation Act No 28 of 1997

This Act established pursuant to the Local Government Act Cap 281 (GRZ, 1997b) provides for the establishment by local authorities, of water supply and sanitation utilities by stating thus in section 9(1):

“A local authority may resolve to establish a water supply and sanitation utility as a company under the Companies Act as follows:

- (a) as a public or private company;*
- (b) as a joint venture with an individual or with any private or public company;*
- (c) as a joint venture with another local authority or several other local authorities*

Provided that the majority shares shall be held by the local authority.”

Section 10 (1) outlines the obligation of local authorities to provide water supply and sanitation services to areas falling under its jurisdiction stating thus:

¹⁴ **Waterworks** includes streams, springs, weirs, boreholes, dams, pumping stations, reservoirs, tanks, sluices, machinery, buildings, lands and all other works and things necessary in connection with any other water main (GRZ, 1991b)

¹⁵ **Water main** refers to conduits, pipelines, valves, valve chambers, meters, meter-houses, break pressure tanks, scour chambers, scour pipes, culverts, cuts, bridges, tunnels and all other things necessary in connection with any water main (GRZ, 1991b)

“Notwithstanding any other law to the contrary and subject to the other provisions of this Act, a local authority shall provide water supply and sanitation services to the area falling under its jurisdiction, except in any area where a person provides such services solely for that person’s own benefit or a utility or a service provider is providing such services”.

It also provides for the establishment of the National Water Supply and Sanitation Council (NWASCO) as the regulatory body for the water supply and sanitation sector and defines its functions which include the mandatory licensing of service providers, setting conditions of the license and developing of guidelines and standards for water supply and sanitation service provision.

iv) Impacts of the Legal Instruments on informal area water supply

Each of these legal instruments have some notable bearing on the provision of water services to informal settlements as summarised in Table 5 below.

Table 5: Implications of the legal instruments governing informal area water supply in Zambia

Legal Instrument	Provisions	Implications on Informal Area water supply
The Constitution Cap No 1	<ul style="list-style-type: none"> There is no proviso on whether access to water should be a human right for all 	<ul style="list-style-type: none"> A weakness in that the providers will not be held fully responsible for non or poor provision
The Local Government Act Cap 281	<ul style="list-style-type: none"> Mandate for water supply is the ultimate responsibility of local authorities 	<ul style="list-style-type: none"> Poor quality service provision may be experienced where a local authority is poorly managed. There should be a further clause allowing for an independent provider to be procured for the sole purpose of garnering efficiency improvements
The Water Supply and Sanitation Act No 28 of 1997	<ul style="list-style-type: none"> Despite it allowing local authorities to establish utilities, it however does not absolve the local authorities from ultimate responsibility for water supply to areas within their jurisdiction It allows for partnership arrangements between the local authority or their utilities and private entities, provided that the local authority retains ownership of the majority shares It provides for the establishment 	<ul style="list-style-type: none"> Provides a “check and balance” arrangement whereby the local authority can monitor and demand good quality service from the established utility on one hand whilst the utility can solely focus on service provision It enables entry by the private sector into the service provision arena, bringing with it alternative approaches to service provision, competent expertise, capital and in some cases a new level of confidence The regulatory authority ensures

Legal Instrument	Provisions	Implications on Informal Area water supply
	of a regulatory authority who sets operational standards and other guidelines	compliance by the various service providers to the set standards and also that the consumers are fairly treated

The Water Supply and Sanitation Act (GRZ, 1997) which was a direct output of the water reform process, does not however, have any direct clause or proviso that categorically mentions or outlines procedures for informal area water supply despite the fact that this group are the majority urban population who are mostly affected by poor service provision which the reform process was trying to address. The statute when viewed in light of service provision to the poor is therefore inadequate as it should have had some specific clauses intended to enhance and give special attention to the urban poor who are in desperate need of an improved quality and quantity of water provision from the mandated providers.

2.5.4 The Institutional Framework

The institutional arrangement after the reform process is as illustrated in figure 8 below.

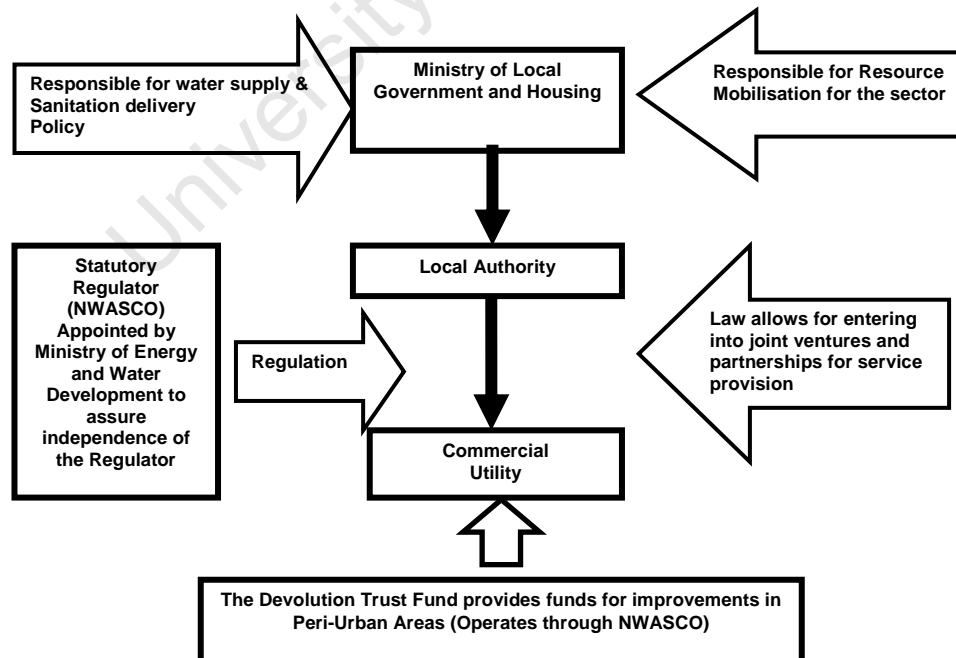


Figure 8: Institutional framework for urban water supply in Zambia (by the author)

The new institutional framework pays special attention to provision of services in peri-urban areas (informal settlements) as can be seen from the establishment of the Devolution Trust Fund (DTF) an entity whose prime responsibility is to mobilise resources for improvements to service delivery in areas where the poor and vulnerable reside. There is also proviso for service delivery using partnerships with the public and or private sector which seems to be a clear indication of the Zambian Government's acknowledgement that the private sector has a role to play in delivery of public services as they have the ability to greatly enhance service delivery (Pirie, 1992). However, there currently is no partnership arrangement in existence between any of the utilities and the private sector apart from the service contract which is regarded as the entry level of public private partnership service delivery arrangements.

2.5.5 The Regulatory Framework

The establishment of a new regulatory framework was one of the key outputs of the water reforms in Zambia. Government gave the rationale for this new approach as being necessitated by the diverse service provision modes that a free economic market would yield such as for example private sector participation (GRZ, 1994). Principle No 2 in the National Water Policy document states that, "*there shall be separation of regulatory and executive functions within the water supply and sanitation sector*" which refers to the "hiving-off" of regulatory responsibilities which at the time were solely vested in the central government. This occurrence in the Zambian water sector of establishment of a regulatory commission in conformity with the new legal framework is consistent with the claim made by Sherman (1990) that, the legal foundations that underpin regulation are very new in many instances around the world.

A specific section titled "**Enactment of New Legislation**" in the NWP document states that new legislation should establish a new entity to perform the following functions (GRZ, 1994):

- a) to regulate against monopolistic tendencies of water companies;

- b) to receive representations from consumers and other interested parties on water tariff adjustments and levels;
- c) to ensure that water tariff adjustments and levels are justified;
- d) to be an appeals body for individuals and institutions not satisfied with services provided by any water company; and
- e) to be an arbiter between the various stakeholders in the water sector in general and specifically to ensure that the interests of water users and the public are safeguarded.

In compliance with this policy pronouncement, legislation was passed that gave proviso for the establishment of an independent regulatory authority (refer to section 2.5.3) to oversee activities in the urban water supply and sanitation sector.

In the Zambian setting, experience has over the years shown that the regulator, NWASCO has given special attention to the needs of the poor as evidenced by the focus given for informal settlement provision (NWASCO 2005, 2006, 2007). This approach is in line with the recommendations given by WUP (2003) that encourage governments to develop pro-poor policies which clearly outline the roles and responsibilities of the various institutions involved in overseeing and providing water services to the poor. It needs to be verified however as to what extent has regulation of the water sector augmented service provision to the urban poor.

2.5.6 Commercial Utilities

Another significant output of the reforms has been the establishment by local authorities of Commercial Utilities (CU's) in various locations of Zambia in accordance with the legislative provisos contained in the Water Supply and Sanitation Act No 28 of 1997 (GRZ, 1997). A total of eleven commercial utilities had been established by early 2009 whose service areas account for all the urban centres in the country.

Table 6: Utilities formed in Zambia to date

Name of Utility	Area of Service	Established
Lusaka Water and Sewerage Company	Lusaka Province	1988
Eastern Water and Sewerage Company	Eastern Province	2009
Nkana Water and Sewerage Company	Kitwe and Kalulushi, Copperbelt Province	1999
Mulonga Water and Sewerage Company	Chingola, Mufulira, Chililabombwe, Copperbelt Province	1999
Kafubu Water and Sewerage Company	Ndola, Luanshya, Masaiti, Copperbelt Province	1999
Southern Water and Sewerage Company	Southern Province	1999
Western Water and Sewerage Company	Western Province	2000
North Western Water and Sewerage Company	North Western province	1999
Chambeshi Water and Sewerage Company	Northern Province	2003
Lukanga Water and Sewerage Company	Central Province	2007
Luapula Water and Sewerage Company	Luapula Province	2009

Source: NWASCO (2009)

The establishment of these commercial utilities can be viewed as a milestone event when viewed in terms of the key objectives that the reforms intended to achieve as was stated in GRZ (1994) i.e., that a well-defined institutional structure would be required in order to attain the ultimate goal of providing adequate quantities and quality of water for all competing groups of users (including informal settlement dwellers) at acceptable costs. The utilities are therefore regarded by the policy makers and implementers as one of the main vehicles that will facilitate the realisation of these objectives. The critical question that remains to be answered is on how effective this approach has been to date and whether the format adopted is the most optimum for the Zambian setting.

2.5.7 Private Sector Participation

One key output of the water reforms as already outlined in Table 5 was that of allowing service providers to enter into partnerships with the private sector the

prime objective being enhancement of service delivery. According to provisions set out in the Water Supply and Sanitation Act No 28 of 1997 it is stated that:

“a local authority may resolve to establish a water supply and sanitation utility as a company under the Companies Act as follows;

- (a) as a public or private company*
- (b) as a joint venture with an individual or with any private or public company*
- (c) as a joint venture with another local authority or several other local authorities*

Provided, that the majority shares shall be held by the local authority.”

The passing of legislation that contains various service delivery options including a role for the private sector serves as a clear demonstration of the Zambian Government’s acknowledgement that participation by the private sector can potentially “enhance service delivery” (Li and Akintoye, 2003; Pirie, 1992). However, majority ownership and control is to be retained by the public entity. This clause may support the position that emphasises government control in socially sensitive sectors such as water supply.

Plummer and Nhemechana (2001: p.iv), define Private Sector Participation (PSP) as, *“the involvement of the private sector in some form, at some stage in the delivery of services. It is a general term that is used to cover a wide range of private sector involvement from the service contract, management contract, concession and Build Operate and Transfer (BOT). It may also include informal sector participation”*. The various partnerships options referred to are classified based on the legal nature of the private sector involvement in the transaction (Yescombe, 2007). Globally, the partnership management approaches are used in some countries to manage public infrastructure such as highways, airports, marine ports, sports facilities, public buildings and to effect service delivery in socio-economic sectors such as education, health, public transportation,

telecommunications and water and electricity supply services (Li and Akintoye, 2003; World Bank, 1997a). The following descriptions explain each of the various private sector participation (partnership) types referred to.

i) The Service Contract

This refers to an arrangement where the public sector retains overall responsibility for operations, maintenance and capital investments whilst the private sector is given responsibility to undertake a '**specific assignment**' for over an agreed period normally not exceeding 2 years for a specific fee. This type of partnership between the public and private sector is normally entered into when the public entity needs expertise to effect improvements in a specific area of its operations, whose skills are prevalent in the private sector which it envisaged will generate rapid improvements in operational techniques and overall service delivery efficiency. When compared to other types of partnerships between the public and private sector, service contracts are normally regarded as the entry level or simplest form of partnerships as the public entity retains almost all the risk and major responsibilities (Li and Akintoye, 2003; World Bank, 1997a).

ii) Management Contract

In the "Management Contract" type of option, the public entity transfers the responsibility of '**operations and maintenance**' of the system to the private sector. The overall responsibility for capital investment and working capital remains with the public authority (government) implying that all the commercial risk remains vested in the government. Remuneration to the private operator may take any of the following forms:

- a fixed fee for performing pre-agreed managerial tasks devoid of overall control on functions that affect productivity and or quality;
- upon the attainment of mutually agreed, clearly defined performance targets.

The management contract option is generally regarded as the 'entry level' for the private sector's participation as it is expected that the management contractor (private partner) can augment information collection about the enterprise and its market before embarking on partnership options that devolve more responsibility to the private partner (Li and Akintoye, 2003; World Bank, 1997b).

iii) The Lease

In this arrangement a private operator leases or rents out the assets of a public sector entity generally for durations ranging from five to ten years. The private operator assumes full responsibility of **management, operation and maintenance** of the entire system of the facilities leased. The lessee is also responsible for provision of working capital and the minor replacement and or upgrading some mutually agreed components of the leased facilities whilst the public authority retains responsibility for planning and financing for new investments and major refurbishment of the physical infrastructure. The lessee pays a lease fee and may also pay a small portion of the generated revenues from the operations (Li and Akintoye, 2003; World Bank, 1997b).

iv) Concession / Build (Rehabilitate) Operate Own Transfer

In this partnership arrangement, the private sector entity finances, designs, builds (or rehabilitates), operates and maintains facilities on behalf of the public sector at its own commercial risk for a period specified in the contract after which the private sector relinquishes all its rights to the public sector. The revenues generated in this partnership arrangement are used to compensate and remunerate the private sector entity. The length of these contracts usually depend on the level and amount of financing outlaid and the period required to attain full return on investment, normally above twenty years (Li and Akintoye, 2003; World Bank, 1997b).

The allocation of responsibilities and assumption of risk are illustrated in Table 7 and Figure 9 below.

Table 7: Allocation of key responsibilities under the main PSP options

Option	Asset Ownership	Operation and Maintenance	Capital Investment	Commercial Risk	Duration
Service contract	Public	Public and private	Public	Public	1-2 years
Management contract	Public	Private	Public	Public	3-5 years
Lease	Public	Private	Public	Shared	8-15 years
Concession	Public	Private	Private	Private	25-30 years

Source: World Bank (1997b) – Tool kit, “Selecting an option for PSP”

Figure 9 illustrates the how the responsibility of investment and risk is apportioned between the public and private entities in a partnership arrangement.

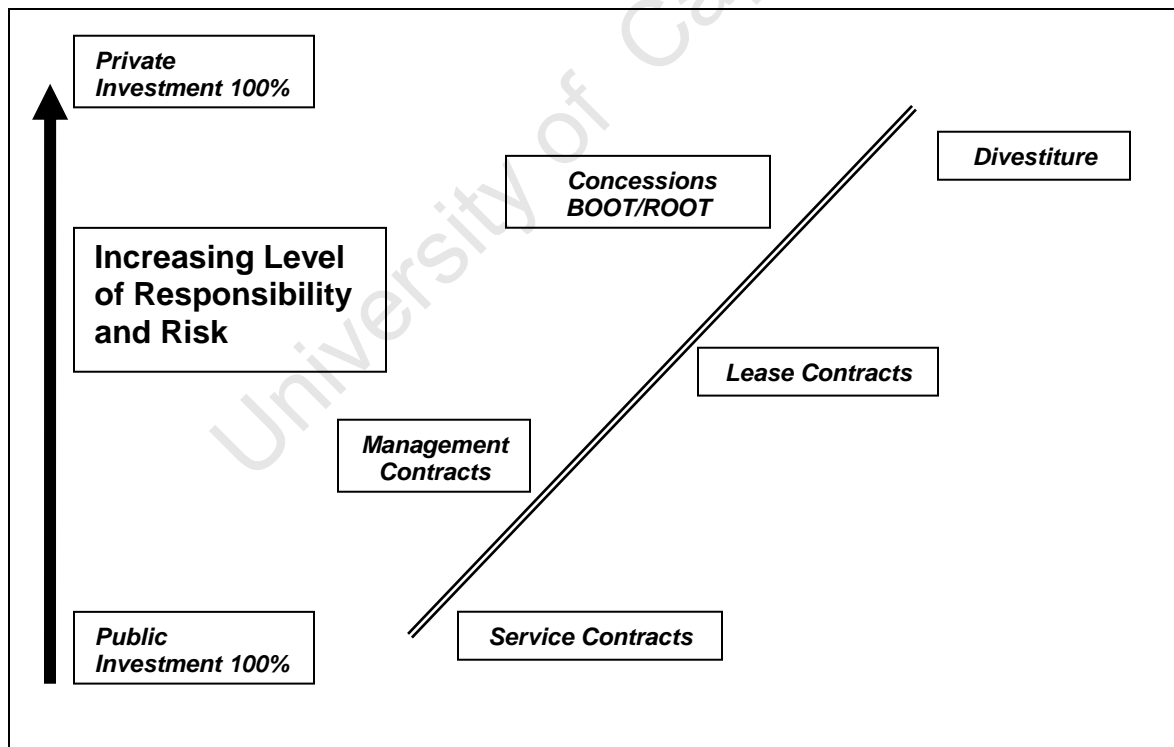


Figure 9: Levels of responsibility amongst various partnership options (Source: World Bank, 1997b)

An interesting phenomenon observed is that none of the commercial utilities operating in Zambia have to date entered into partnerships with the private sector (i.e. management contract upwards) despite the existence of a legal provision allowing these partnerships to occur. It is imperative therefore that reasons as to why this avenue has not yet been pursued in light of the prevailing low access levels to water supply that have been attained using the existing service delivery mechanisms need to be established. Furthermore, the definition given by Plummer and Nhemechana (2001) includes partnerships with the informal sector as one of the probable options. The question that needs to be answered in response to this definition is whether there the policy makers in Zambia had as one of the potential private partners entities derived from the informal sector.

2.6 Public Private Partnerships: A Theoretical Overview

The term partnership is used to describe a relationship between two entities be it organisations or individuals in several different types of circumstances and situations (Mcquaid, 2000). It is imperative therefore that the contextual orientation on which the term *partnership* is used in this research is clearly clarified from the onset. This study propositions an arrangement between the 'public sector', who by law has exclusive mandate for service provision and the 'private sector', who it is envisaged will positively impact the existing service delivery arrangement key result being the upliftment of the beneficiary recipient's quality of life also referred to as poverty reduction.

Therefore, partnerships entered into to foster economic development and improve people's well-being such as the principle focus of this study, will be founded on a number of dimensions which once combined will yield a set of unique characteristics. Mcquaid (2000) identified five main dimensions common to partnerships;

i) What the partnership seeks to do

This is considered as the main dimension upon which classification of a partnership is effected. The principle purpose may be to solely improve

service delivery or to attract and develop new resources for an area or both. The partnership may therefore be:

- a) purely '**exogenous**' i.e. to attract external resources from outside the partnership;
- b) purely '**endogenous**' i.e. which seeks to maximise the effective use existing resources and the synergy between the resources; or
- c) both '**exogenous**' and '**endogenous**'.

Most partnerships entered into to foster economic development fit into category 'c' which is a combination of both.

The principal driver(s) behind the establishment of a partnership ought to be clearly identified. Is the objective principally to implement a single project or programme or is it to enhance the quality of life for residents of an area using several selected programmes (Li and Akintoye, 2003).

ii) **Who is involved**

The 'would-be' partners to a partnership ought to be identified and a clear understanding of how they will contribute to the partnership garnered. This is as a result of the wide differences in motives and inherent resources amongst the various potential actors in the private sector. Arguments that underpin this viewpoint include:

- a) the firm's business philosophy;
- b) the firm's ownership; and
- c) historical and geographical links that the firm may have with the area to be served.

Mcquaid (2000) identified three main assumptions that underlie the various definitions of partnerships in the economic development arena as:

- the potential for some form of synergy that is the total "sum" arising out of the partnership, should be greater than the constituent parts;
- the partnership should have as its key output the development and delivery of a strategy and or a set of projects or operations; and

- the public sector entity in the partnership not necessarily pursuing commercial goals.

2.6.1 The Evolution of Public Private Partnerships

The Public Private Partnerships concept has been in existence in the continents of Europe and America for several centuries (Li and Akintoye, 2003). This assertion is concurred with in HDR Inc. (2005) where it is stated that PPPs have a 'rich heritage that dates back centuries'. Prominent examples that support these claims include the provision of drinking water to the public by a private firm called the 'Water Works Company of Boston' in the year 1692 (HDR Inc., 2005); the construction in the mid-19th century of the transcontinental railroad in the USA, where the state and private sector combined resources to construct a vital railway link (Judah, 1857; HDR Inc., 2005) and the usage of PPPs during the 19th century in France as a means through which to provide municipal services such as urban transport and waste management (Yescombe, 2007).

Bult-Spiering and Dewulf (2006) contend that many governments worldwide are increasingly depending on the private sector for implementation of projects since the public sector can no longer afford large capital investments in infrastructural development. According to Li and Akintoye (2003: p.3), the PPP concept "*has become more prominent in recent decades as a means to fulfilling the local development agenda*". Moulton and Anheier (2000: p.109) state in more specific terms that, the mutual dependence between the public and private sectors was established and grew in large part during the 1960s and 1970s and has "*held ground since then*". These statements seem to support the view that the invitation of the private sector to participate in infrastructure and service provision in partnership with the public sector is primarily anchored on the quest by the public sector to realise improvements in infrastructure provision, higher efficiency and quality in social service delivery to the public at large.

In the United States of America (USA) for example, there was a marked policy shift beginning in 1980 when Ronald Reagan¹⁶ assumed the presidency whereby more emphasis was placed on reducing government funding for social programs in preference to performance type contracts that emphasised efficiency and capacity (Moulton and Anheier 2000; Bult-Spiering and Dewulf, 2006). A similar trend to that experienced in the USA was observed in the United Kingdom when the then Margaret Thatcher¹⁷ led Conservative government embarked on massive privatisation exercise of public services (Yescombe, 2007). The main reasons advanced for this major policy change in public service provision in the UK were; increased efficiency, higher levels of competition (which leads to better service standards), reduced government spending and reduced cost to the consumer (Yescombe, 2007: p.16). Other countries in Europe also adopted the PPP approach to effect delivery of public services. The Netherlands government for example made a policy pronouncement in 1986 which stated that:

“New structures of public and private co-operation are founded, including local government, local business and if necessary, central government, aimed at raising investments in urban renewal” (Bult-Spiering and Dewulf, 2006: p.8).

Yescombe (2007) agrees with this policy statement by arguing that when a PPP contract arrangement falls outside the public budget, the public sector is enabled to make or accelerate investments in infrastructure which would not have otherwise have been possible or would have been delayed until later. One can therefore infer from this policy pronouncement that the Netherlands government regarded the PPP as a possible means through which accelerated urban renewal would be garnered mainly due to some key inherent attributes possessed by the private sector that were absent in the public sector domain.

¹⁶ Ronald Reagan was the 40th President of the United States of America from 1981 to 1989 (D'Souza, 1997)

¹⁷ Margaret Thatcher was the Prime Minister of Great Britain from 1979 to 1990 (Thatcher, 1993)

This ever growing endorsement of partnerships with the private sector in preference to lone provision of public services by the public sector is due to several commonly cited factors blamed as being responsible for poor performance by the public sector (Savas, 2000):

- inefficiency, overstaffing and low productivity;
- poor quality of goods and services;
- continuing losses and rising debts of for-profit government enterprises;
- lack of managerial skills or sufficient managerial authority;
- unresponsiveness to the public;
- inadequate (or even a complete lack of) maintenance of facilities and equipment;
- monopoly status;
- insufficient funds needed for capital investments;
- multiple and conflicting goals;
- little (or even a complete lack of) marketing capabilities; and
- theft and corruption.

2.6.2 Public Private Partnerships Defined

There are many different definitions of PPPs in use worldwide due to the many types and forms of PPPs in existence (Bult-Spiering and Dewulf, 2006). Li and Akintoye (2003: p.5) agree with this assertion but further explain that despite there being no unified definition of PPPs, all the definitions in use “*have common features or characteristics*”. Li and Akintoye (2003) and Bult-Spiering and Dewulf (2006) outlined five main defining features of PPPs as follows:

- 1) there is an involvement of two or more actors one of whom is public and the other from the private sector;
- 2) each participant is a principal having the capability and mandate to bargain on its own behalf;
- 3) there is an establishment of an enduring and stable relationship amongst the actors;

- 4) each participating entity contributes some form of resources into the partnership; and
- 5) there is a shared responsibility for the activities and the eventual outcomes.

It is however imperative at this juncture that a clear distinction be made between the terms '*public private partnerships*' and '*privatisation*' as many use the terms interchangeably resulting in a form of 'semantic confusion' (Bult-Spiering and Dewulf, 2006), or as Savas (2000: p.3) notes that, "*confusion about the PPP concept is striking in the political and social discussion on these governance questions. Often PPP is used as synonym for privatisation*".

PPPs therefore refer to a contractual arrangement where the participating entities **share** costs and revenues whilst privatisation refers to the **complete transfer** of tasks, responsibilities and even ownership to the private sector resulting in both the costs and revenues being in the private sector's ambit (Bult-Spiering and Dewulf, 2006; HDR Inc., 2005; Plummer, 2002). In other words, PPPs ought to be viewed in very broad terms as a **derivative** of privatisation which concerns the **reduction** of the role of government whilst at the same time **increasing** the role of private institutions in order to meet people's needs. There are two main actors in a PPP relationship namely, the "**public sector**"¹⁸ on one hand and the "**private sector**"¹⁹ on the other. The actors may be public, private, non-governmental organisations (NGOs) or any group of individuals or an individual entrepreneur all of whom could fundamentally have different objectives, values, cultures, structures, but agree to share risks, responsibilities, resources, competencies while sharing common goals".

¹⁸ **Public Sector** as used in this study refers to the publicly owned institution which is mandated through an act of parliament to provide water supply and sanitation services to an area over which it has jurisdiction.

¹⁹ **Private Sector** as used in this study refers to a company or small business enterprise organised for attainment of profit during provision of water and sanitation services to a community or groups of communities.

It follows therefore that the type of definition of a PPP that one uses will be largely influenced by the specific objectives that a particular PPP intends to achieve. Yescombe (2007) and Bult-Spiering and Dewulf (2006) both identify two main types of PPPs categorised as follows:

- **Policy (or Programme) Based PPPs** – which are a cooperative ventures formulated primarily to promote economic development. The investment and roles of the private partner are governed by a laid down set of rules and they generally do not have a clear definable end point. Policy based PPPs are used widely in joint government, aid agency and private sector initiatives to for example combat major disease outbreaks or even in interventions purposively embarked on to improve for example farming methods amongst the poor or strategies to enhance food security.
- **Project (or Contract) Based PPPs** – these are long term contracts formed between the public and private sectors whereby the private party's key roles can include the financing, design, construction and or operation of public facilities (or infrastructure). The facilities or infrastructure²⁰ remains under public ownership or reverts to public ownership at the end of the PPP contract.

This study is confined to the “*project (or contract) based*” type of PPPs since the principal focus is on establishing what effect a partnership between the public and private sector may have on provision of water supply services to the public (in this case specifically focusing on the urban poor) using a mandate acquired through a legal statute.

The main cornerstones on which a PPP is formulated to effect public services include the combination of resources, sharing of responsibilities and risks and mutual derivation of benefits. Helmut and Johnson (1992: p.197) defined PPPs

²⁰ **Public Infrastructure** is defined by Yescombe (2007: p.1) as facilities which are necessary for the functioning of the economy and society. It can be divided into **economic infrastructure** i.e. infrastructure essential for day to day economic activity e.g. transportation facilities and utility networks for water, sewage and electricity and **social infrastructure** i.e. infrastructure essential for the structure of society such as schools, hospitals, prisons and libraries.

as, *“the combination of a public need with private capability and resources to create a market opportunity through which the public need is met and a profit is made”*. The definition by Helmut and Johnson (1992) suggests that there exists a *‘public need’* or service delivery deficiency which can be redressed once the private sector gets involved by making available its resources. In addition, the definition asserts that, an opportunity to harness a market upon which a profitable business venture can be developed will be realised. This definition however is silent on the role of the public sector in solving the so-called public need. It may easily be construed to imply that the private sector can resolve the existent problems in isolation which is at variance with the concept of partnership.

The definition given by the National Council for Public Private Partnerships (NCPPP) of the United States of America (USA) defines PPPs as *“a contractual agreement between a public agency and a private sector entity”* whereby through this agreement *“the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public”* and also that *“each party shares in the risks and rewards potential in the delivery of the service and or the facility”* (NCPPP, 2009). This definition incorporates all the main elements that constitute a PPP formed for public service delivery namely sharing of roles and risks and also the contribution of resources by all the participating entities.

For the purposes of this research therefore, the adapted definition of PPPs can be termed as follows;

“a mutually beneficial business arrangement between the public and private sectors, formed for the principal purpose of enhancing public service delivery”²¹

Leiringer (2005), argues that the aspect of mutual benefit in a PPP relationship is debatable as both the private and public sector have different planning horizons which entail that what could be beneficial for one party may not be considered beneficial for the other in the long run. This argument however ignores reality in that the private sector is principally driven by an ultimate desire to make a profit hence it cannot venture into a business arrangement that does not anchor on this proposition. The public sector on the other hand engages the private sector to partner with it into arenas where it has exclusive legal mandate due to various inherent shortcomings that arise when in it is effecting public services in isolation from other entities. Savas (2000: p.111) supports this viewpoint stating that: *“dissatisfaction and recurrent problems with government activities invite privatisation as a possible remedy for the problems”*.

Prominent amongst a government's fundamental objectives is to ensure that the populace has access to good quality public services which in turn shall positively impact their quality of life. Mcquaid (2000: p.11) in support of the claim held by some that, governments or public sector are not chiefly driven by profit gains as opposed to improved service provision, strongly stated that *“in public private partnerships, the public sector are not pursuing purely commercial goals”*. He further explained that a public private partnership should be viewed as, *“any action which relies on the agreement of actors in the public and private sectors and which also contributes in some way to improving the urban economy and the quality of life”*. Li and Akintoye (2003: p.7) through their statement that, *“PPP procurement can provide a wide variety of net benefits for a government. Chief amongst these is the possibility of more and better projects being built and*

²¹ The aspect of risk apportionment is implied in this definition as risks are always existent in a business transaction or arrangement

services being provided” strongly validate the proposition that states that, the public sector’s prime motive has more to do with garnering improvements in the delivery of public services than mere attainment of profit.

The key emergent theme embedded in the PPP concept that can be derived from the various definitions is centred around the following cornerstones namely; resource availability by all participating entities, risk reapportionment, mutually rewarding and should address a public need that is not effectively delivered.

2.6.3 The Benefits of Public Private Partnership

The benefits that are accrued through the adoption of the PPP mode to effect service delivery are many and varied. They are all anchored on the principle features inherent in the PPP concept which include the attainment of a mutually beneficial arrangement through the sharing of costs and revenues and also the reapportionment of risks and responsibilities by the participating parties.

i) Increased efficiency

It is stated in World Bank (1997a) that since the private partner’s ultimate motive will be to make profit there will be a strong incentive to contain costs at the same time increasing on productivity. This can be in the form of lowering of staffing levels, rapid adaptation of new technologies and processes and improved (enhanced) revenue collection practices. This benefit also positively impacts on governments financial resources as Pirie (1992) argued that, through participation by the private sector, the burden that government bears through provision of subsidies for loss making public enterprises is reduced or completely removed. The gain in these circumstances for the government is usually two-fold, removal of subsidy provision and re-directing of the “saved” resources to other needy sectors to generate growth. This benefit is most critical in circumstances where the government is facing budgetary constraints evidenced by an inability to adequately cater for the policy challenges of economic and social development (World Bank, 1997a).

ii) Access to management expertise

The public sector can acquire new skills, technology and expertise both during the formulation and implementation of the PPP contract due to close interaction with the private sector (Yescombe, 2007; Li and Akintoye, 2003; Carroll and Steane, 2000; Ramaema, 1997).

iii) Recapitalisation

Entry of the private sector brings with it new vigour and confidence as a result of changes in management style, approach and attitude. There has to be a strict adherence to cost recovering tariffs which creates an enabling environment for new domestic and foreign investment which can swiftly reinvigorate operations and also help defuse domestic opposition to participation by the private sector (Savas, 2000; World Bank 1997a; Pirie, 1992).

iv) Depoliticisation

The operational environment in PPP is dictated by strict adherence to commercial principles as opposed to political appeasement and considerations. Painter (2003) cites one of the main objectives of corporatisation (which is the process of transforming state assets or municipal organisations into corporations) as being the changing of the relationship between the political authorities and government enterprises through the establishment of new rules. The rationale for some form of private sector involvement in the South African water sector was so as to distance the sector from short term political intervention in the operation of a utility and also to reduce opportunities for intervention by powerful vested interests (Ramaema, 1997). In general terms therefore, realisation of an 'arms-length' relationship with the political establishment exacerbates operational efficiency.

v) Transfer of risks

When a PPP is formulated, some risks are transferred from the public sector to the private sector. Boothroyd and Hardcastle (2003) list some of the potential risks that can feature in a PPP namely credit risk which arises when

there is default by debtors which in turn adversely affects the ability of the operator (say the private partner) to settle a credit facility. Operational risk arises during processing, confirming and reconciliation of transactions. Legal risk comes to the fore when new legislation and regulations are introduced with adverse consequences on the existing transaction(s). Li and Akintoye (2003) suggest that an appropriate risk transfer strategy should therefore be developed so that only the risks best managed by the private partner are transferred to it and those best managed by the public partner are retained by it.

vi) Enhanced Competition and Keener Prices

PPPs create opportunities for competition whereby several private enterprises can operate in the same service arena. This impacts positively on service delivery quality through creation of a much more realistic and competitive pricing regime and also increased choice by the customers due to the many private entities operating within the same area (Pirie, 1992).

vii) Economies of Scale

A PPP creates an enabling environment for accelerated investment in a service delivery process, or as stated by Yescombe (2007) that it can provide for investment in public infrastructure to be accelerated. The increased investment can lead to optimal use of available labour and other resources such as plant and equipment which can lead to reduced unit production costs.

viii) Improved service quality

Due to high competition levels amongst various private enterprises who all aspire to enter into partnership with the public sector, the private enterprise that has been awarded the contract will strive to provide a good quality of service and appease its customer base, the underlying incentive being the continued extension or award of the contract (Pirie, 1992).

The benefits of PPPs obviously accrue though in differing measure to all the participating entities in a PPP. The assertion by Teisman and Klijn (2000: p.86) that, "*the benefits of partnership arrangements especially concern*

increasing effectiveness, synergy and enrichment of output” summarises in general terms all the various benefits enumerated. The inherent benefits of PPPs outlined underscore the quest to develop a deeper understanding of PPPs with respect to how they have evolved globally and the experiences where they have been employed to foster public service and infrastructural development.

2.7 The Theoretical Framework

2.7.1 The New Public Management Theory

Public Private Partnerships have been developed around the world within the context of a new global paradigm known as New Public Management (NPM) Drewry (2000). Christensen and Laegreid (2000: p.1) explain that the NPM theory is inspired by *“a particular set of economic theories and normative values whose main focus is increasing efficiency”*. Additionally they identify the main characteristics of NPM as: increased market orientation, devolution, managerialism and the use of contracts and that the end result has been the transformation of the public sector in many countries. These characteristics are congruent with the characteristics inherent with PPPs as discussed in earlier sections.

Sahlin-Andersson (2000: p.43) contended that the *“NPM is a label used both to define a general trend towards changing the style of governance and administration in the public sector and to describe a number of reforms that were carried out in several countries during the 1980s and the 1990s”*. The NPM approach to management of public services is anchored on the belief that *“markets are inherently superior to public bureaucracies when it comes to delivering efficient and user friendly public services”* (Drewry, 2000: p.61).

Arguments in favour of these propositions are supported by the British experience of the early 1980s when government influence and involvement in public service delivery was substantially reduced in favour of the private sector

who were perceived to be more efficient especially in the utilities sector and also that the introduction of a competitive environment lead to better service delivery and lower costs for the consumers, as well as less wastage of economic resources most especially in instances where these services are provided free or below cost by the state (Yescombe, 2007). HM Treasury (1992) reports that, the results of this shift away from the traditional 'public service delivery approach' has led to reduced utility charges and marked improvements in the quality of service delivery.

Bult-Spiering and Dewulf (2006: p.1) point out that, the involvement of the private sector means that **outputs and performance** are now the key criteria for monitoring performance and that, *"the rise of NPM ideas and instruments as a counterpart to traditional, input-oriented management styles results in an increasing interest in output management, evaluations and separation of policy making and enforcement"*. Christensen and Yoshimi (2000: p.72) support this view by stating that, the NPM approach *"accords significant importance to performance reporting"*.

Performance and output stand out prominently therefore as key cornerstones upon which the PPP transactions are founded. Pirie (2002) describing the 'ten objectives of privatisation' identifies the lowering of costs, better service quality, better management and profitability restoration as some of the main outcomes of private sector involvement in public service delivery.

Christensen and Yoshimi (2003) identified the following underlying doctrines of NPM:

- unbundling of the public sector into corporatised units organised by the product;
- more contract-based competitive provision, with internal markets and term contracts;
- stress on private sector styles of management practice;

- more stress on discipline and frugality in resource use;
- more emphasis on visible hands-on top management;
- explicit formal measurable standards and measures of performance and success; and
- greater emphasis on output controls.

These doctrines are very similar to the position taken by Yescombe (2007: p.16) who stated that, PPPs must be seen within the overall context of the 'New Public Management' which encourages:

- decentralisation of government;
- separating responsibility for the purchase of public services from that of their provision;
- output or performance-based measurements for public services;
- contracting-out public services to the private sector; and
- privatisation of public services.

The NPM mechanism therefore forms a sound **theoretical foundation** for PPPs due to, its strong attachment to the application of "*market based criteria for the delivery of public products and services*" (Yescombe 2007: p.7), which includes output based performance, adoption of private styles and approaches in management and a marked reduction in the role of government in service delivery.

2.7.2 The Agency Theory and PPPs

The public entity in a PPP is regarded as the principal partner as they possess the exclusive mandate to render service delivery to the public. Invitation of the private sector by the public sector is an acknowledgement that the private sector can enhance operational efficiency and general effectiveness. However, the complexities associated on how best to formulate an effective and fair contract arrangement still exist. The Agency Theory also commonly referred to as the "Principal-Agent Problem" or 'The Theory of Incentives', is one such aspect. This theory is concerned with the treatment of problems that arise under conditions of

incomplete and asymmetric information²² (or hidden knowledge) when a principal hires an agent (Eisenhardt, 1989; Laffont and Matrimort, 2002). The principal may be motivated to delegate some of its tasks to an agent due to (Laffont and Matrimort, 2002):

- i) a desire to benefit from positive returns that may arise as a result of an agent's good performance;
- ii) lack of time to perform the task effectively; and
- iii) lack of ability to perform the task.

However, arising out of this delegation of task(s), a very high probability of the agent accessing information that the principal is not privy to, can result in the agent acquiring an unreasonably larger share of the benefits expected from the transaction (Yescombe, 2007).

The 'principal-agent' problem therefore provides useful insight into the problems that are associated with the formulation of a PPP whose prime objective is the fostering of efficient and effective public service delivery whereby the public partner will define the problem and specify the expected outcomes to the potential private partner (Teisman and Klijn, 2000). The main questions that the public partner will need to address at this stage will include:

- i) How to ensure that the agent performs the delegated functions diligently;
- ii) How to determine the required incentives;
- iii) How to avert the agent accruing excess profits at the expense of the prescribed service delivery standards (or the propensity by the private entity to solely focus on appeasing self-interest as illustrated in Figure 10);
- iv) How to effectively monitor the behaviour of the agent whilst at the same time ensuring that the prescribed service delivery standards are adhered to; and
- v) Determination of any other information that may be considered to be asymmetric.

²² This a situation where one party in a transaction has more or superior information compared to another

These identified factors ought to be given due attention during the design of the contract to avert a potentially acrimonious situation where one participating entity will take advantage of the other due to information asymmetry.

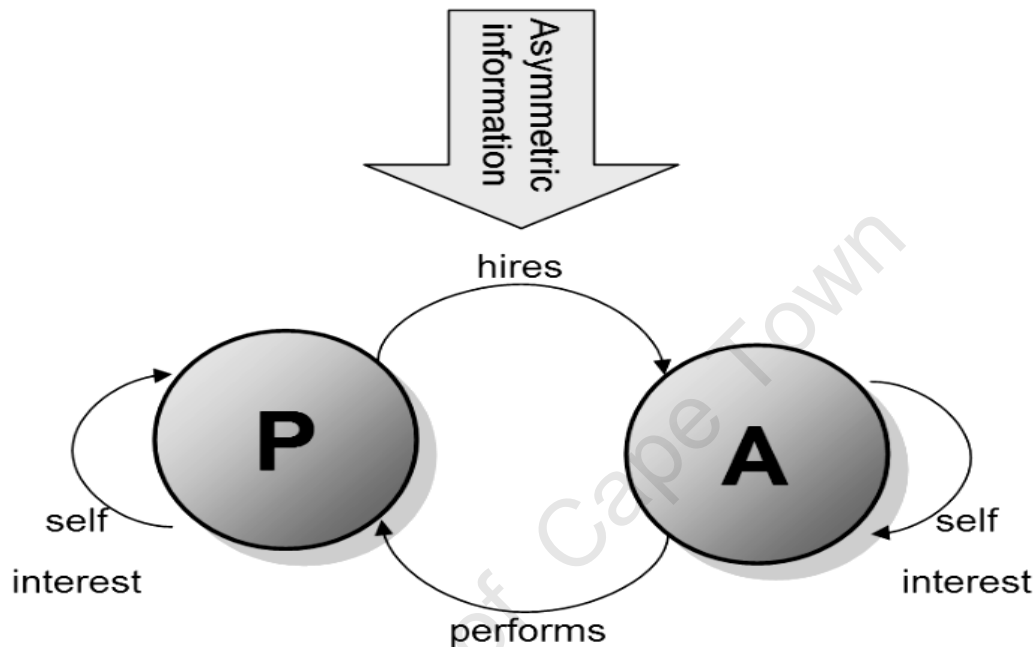


Figure 10: Basic Idea of the Agency Theory (P: Principal, A: Agent)
(https://en.wikipedia.org/wiki/Principal-agent_problem viewed on line 30th September, 2006)

The solution to the information problem according to the Agency Theory is that there should be in-built into a contract, adequate performance related incentives. This relationship is analogous to that existent in a PPP whereby the public entity is the principle and the private entity is the agent. The public entity hires the private entity to perform specific functions for and on its own behalf preferably at maximum operating efficiency and lowest cost. The main incentive for the private entity is remuneration after satisfactory execution of pre-agreed tasks. However, the difficulty that the public sector faces is correctly determining how much remuneration should be paid to the private entity.

Milgrom and Roberts (1992) identified some basic principles of contract design namely:

- i) the **Informativeness Principle** – which states that any measure of performance that reveals information about the effort level chosen by the agent should be included in the compensation contract. This principle refers to ‘performance based’ contracts which encourage the agent to exhibit high levels of initiative and output as the remuneration directly corresponds to the level of effort and achievement of the set goals;
- ii) the **Incentive-Intensity Principle** – which states that setting incentives as intense as possible may not necessarily be optimal from the point of view of the employer. The factors in which optimal intensity depends on are: the incremental profits created by additional effort, the precision with which the desired activities are assessed and both the agent’s risk tolerance and responsiveness to incentives. Over emphasis on incentives can pose major challenges for the agent as it may overexpose or assume a large portion of risk which may prove detrimental; and
- iii) the **Monitoring-Intensity Principle** – which states that situations of high optimal intensity correspond to situations where optimal monitoring is also high. The performance targets in this instance are derived from previously collected baseline data which will be used to regulate the agent’s activities.

These outlined principles ought to be considered during the design of contracts to minimise the adverse effects of asymmetric information on the whole transaction.

In a PPP the ‘public sector’ due to poor performance or even inability to provide public services under its mandate delegates the function or task to the ‘private sector’ (Laffont and Matrimort 2002). The agency theory as contended by Eisenhardt (1989) is concerned with how to treat problems that arise when there is asymmetric information when a principle hires an agent to perform delegated

tasks. Asymmetry of information can therefore stifle or frustrate attempts to adopt a PPP for public service delivery or have an adverse effect during the execution of PPP. A situation of asymmetry in access to information has a negative effect even in business transactions that are not PPPs.

It is essential therefore to clearly establish whether the various sub-propositions that build up the agency theory would be inherent in a PPP formulated solely to render water supply services to poor urban inhabitants. This raises the question as to whether or not the assertions that explain the agency theory can be applied wholesomely to any PPP transaction.

2.7.3 The Agency and New Public Management Theories from a PPP Perspective

There exists a strong correlation between both theories when viewed in light of PPPs. Firstly, PPPs are resorted to when there is poor performance or inefficient delivery of public goods (market failure). Their formulation from the onset is anchored in the NPM ethos that states that there should be reduced involvement of the public sector in preference to the private sector during service delivery, most especially in instances where this leads to efficiency improvements (Yescombe, 2007). In addition, the NPM emphasises output and performance (Christensen and Yoshimi, 2003; Bult-Spiering and Dewulf, 2006). Secondly, the formulation process of a PPP can be seen in the context of 'an attempt' to modify the organisation to address the existing internal and external factors, in order to make it more effective. Finally, the formulated organisation (i.e. the PPP) according to the NPM theory will be monitored mainly on the basis of output and performance.

It is clear that the challenges that are brought to the fore as outlined in the agency theory need to be addressed during contract formulation. The organisation's operational information should be clearly spelt out, the information exchange during contract formulation should be transparent and there should be

a deliberate quest to align the interests of all the participating entities which will help to minimise the negative aspect of self-interest as illustrated on Figure 10.

2.7.4 Community Based Providers and NGOs

Community based water providers and Non-Governmental Organisations (NGOs) are not explicitly recognised in the institutional framework for water supply in Zambia. The definition of NGOs given in UN (2003: p.154) describes them as entities that are *'largely or entirely autonomous from central government funding and control: emanating from civil society or from political impulses beyond state control and direction'*. One distinct characteristic of NGOs therefore is that they have an arm's length relationship with government in that, they are not subject to government control. What needs to be answered therefore is why are NGOs occupying a greater role in service provision to the poor people in developing countries?

The proliferation of NGOs that are involved in service provision such as water supply in developing countries has been a direct outcome of inadequate service provision by those mandated to do so or as contended by Sansom et al. (2004a) that, these organisations are in existence to compensate for the limited capacities of municipalities and other public sector providers in many low income countries. UN (2003: p.156) gives another dimension to this assertion stating that, *'service delivery through markets and private initiatives is held to be more efficient than through the state, while because of their supposed cost effectiveness in reaching the poorest, NGOs have become the preferred channel of official agencies wanting to provide welfare services to those who cannot be reached through the markets'*.

There are opposing views to the camp that espouses increased roles for NGOs in service delivery on account of their attributes which appear to be in tandem with the needs of the poor communities. Those in opposition point out that, NGOs have intrinsic limitations from, firstly, a legal standpoint as they do not

have the capacity to make binding, non-voluntary decisions that a government (or government formed entity) can effect (Ostrom et al.,1993). Secondly, interventions that NGOs embark on usually arise out of an emergency situation implying that in most cases, no due regard is given to issues that concern the legal status and ownership of say the infrastructure for a water supply project which can potentially turn out to be a complex legal quandary after service levels have been stabilised (WUP, 2003). Lastly, NGOs are likely to face resource constraints that can prevent them from scaling up to match the needs of the ever growing poor and increasingly impoverished urban population (Franceys, 2008a). Sustainability of the intervention is likely also to be under threat as the resource base diminishes without replenishment.

It is still obvious that NGOs have an immense role to play in enhancing access by the poor to services taking into account the low levels of access currently prevalent in poor communities. In Lusaka, Zambia and Nairobi, Kenya for example, there are many NGOs working in informal settlements that provide water supply services with appreciable levels of success (Banda, 2006; Sansom et al., 2004a). Resource limitation however inhibits the NGOs from fully meeting the existent demand levels, which implying that ultimate responsibility still remains with the mandated providers established by government. Experience has shown worldwide that NGOs possess fine skills in community mobilisation, facilitation, negotiation, capacity building and participatory planning which can be used by public providers serving informal settlements. Hence, their role needs to be clearly outlined and prescribed in both the national policy and the institutional framework that oversees water supply to informal settlements.

2.8 Water Supply to Zambia's Informal Settlements: A Critique

Despite the well intentioned attempts by the Zambian Government to reinvigorate public water supply provision through effecting reforms there are, to date many issues that need attention if substantial gains in water service delivery to informal

areas are to be realised. The existing operational framework is critically analysed in this section so as to establish the areas that need special attention.

2.8.1 Mandate Issues and Political Expediency

The issue of mandate and political expediency in public water provision cannot be overlooked in an operational framework where central government is the main driver of activities. The evaluation of the Zambian operational framework, which is the central focus of this study, has so far demonstrated the pivotal role that government plays in this arena is largely due to the existence of the condition referred to as market failure (Winston, 2006; Goyal, 2004; Cowen, 1996; Munday, 2000). In addition it has been established in the preceding sections that the providers (commercial utilities) enjoy a monopoly status. The key issue that needs resolution at this juncture concerns whether the discharge of the delegated mandate by the utilities has more to do with appeasement of the political establishment (and compliance to government directives) as opposed to satisfying purely business considerations. This observation is vital in order to fully appreciate the challenges that a public provider such as a water utility may be contending with and also how these factors may impact operations.

2.8.2 Performance results of the Commercial Utilities

It has been stated in the previous sections that one of the key landmarks of the water reforms that were embarked upon in the early part of the 1990s in Zambia was that of enacting legislation that provided for the establishment of commercial utilities by local authorities. It is essential therefore that the performance results of these utilities are analysed. In this section the evaluation has been limited to the results published annually by the National Regulatory Agency for Urban and Peri-Urban Water Supply, NWASCO from 2001 to 2007. Banda et al., (2008) presented a graphic illustration of the results compiled from NWASCO (2001) to NWASCO (2007) as shown in Figure 11 below.

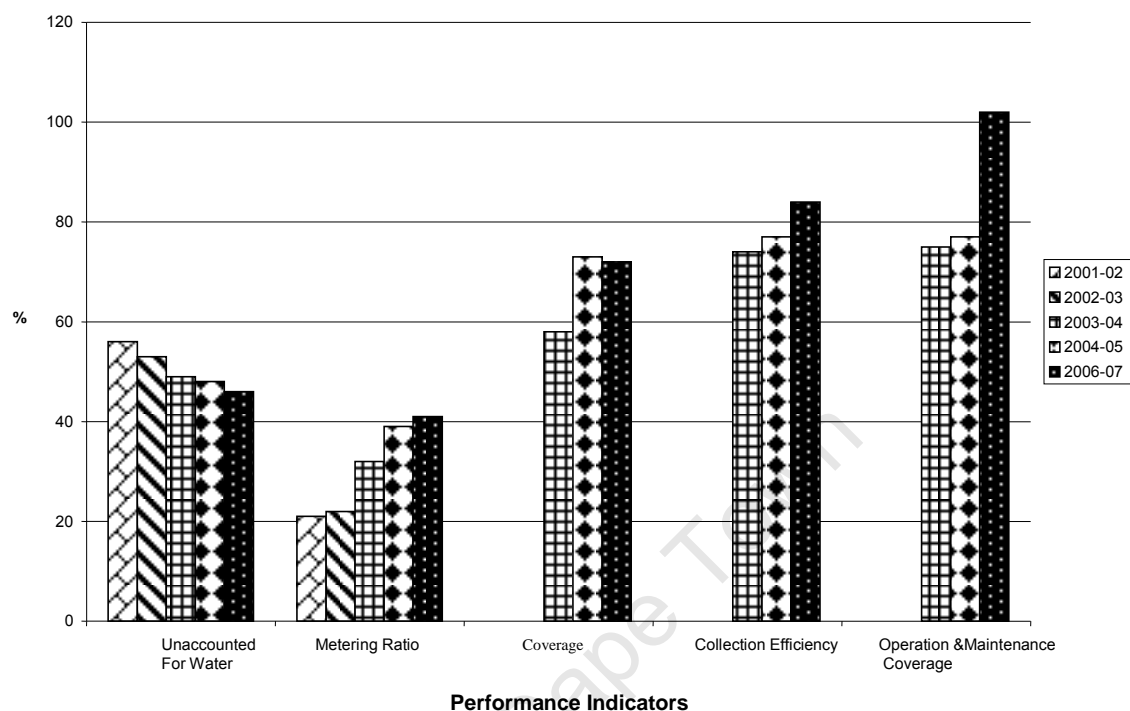


Figure 11: Average Performance by Water Utilities in Zambia from 2001 to 2007

Results of the various key performance indicators attained by the utility companies such as coverage, unaccounted for water²³, collection efficiency and coverage of operation and maintenance costs have shown a continual upward trend since the utility companies came into operation as follows:

- reduction in unaccounted for water from an average of 57% to 47%. This parameter points to a reduction in operational costs and helps to increase revenue;
- increase in metering from an average of 21% to 42%. This increase positively impacts revenue collection and helps reduce water wastage by consumers;
- expansion in average coverage from 58% to 72% revealing an appreciable level of growth;

²³ Unaccounted for Water is the difference between the quantity of water supplied to a network and the metered quantity used by the customers (http://go.worldbank.org/U22_MWA_IZD0 viewed on line 23rd November, 2013)

- an increase in the level of revenue collection from 75% to 83%; and
- an upward increase in the level of operation and maintenance cost coverage from 78% to 102%.

These results paint a very encouraging picture and bear testimony to the contention that the reforms did yield positive results and therefore should not be wholesomely deemed to have been unsuccessful. On the other hand, one can argue that an aspect such as 'coverage' for example despite showing some appreciable increase, still falls **well below** the expected levels. This assertion can be supported by the data in Table 1 on page 2 that shows low access levels prevalent in the informal settlements where, the majority of the urban population reside. These results outcome underscore the need for a thorough re-examination of the existing service delivery mechanisms in order to establish whether the current approaches need to undergo some level of transformation which can result in higher levels of improvement.

2.8.3 Key emergent issues and questions

Several issues that have impacted the service delivery process have been identified through the review of the available literature. It is clear that the existing service delivery arrangement for water provision to informal settlements is still beset with many challenges that need redress if the quest to attain improved access to water services amongst the informal settlement population in Zambia is to be realised. At this juncture in the research process, the researcher is in a position to clarify the premise upon which this study is founded. The following issues and their ensuing implications will need further probing in order to fully understand the phenomena under investigation:

1. Have the water reforms had a paradigmatic effect on Zambia's water sector?
2. Why have commercial utilities not entered into partnerships with the private sector despite there being a provision in the new legal framework that allows them to do so?

3. Should the current service delivery mechanism allow for other actors with a different ethos from that of the public providers?
4. What effect has regulation of the water supply sector had on service provision particularly to the informal settlements where the majority poor reside?
5. What are the impacts of continued growth and development of unplanned settlements on water service provision to urban areas as a whole?
6. Has the government in its quest to correct the existent condition of ineffective service delivery (market failure) instead given rise to government failure?
7. Are there adequate incentive levels for public utilities serving informal settlements?

The resolution of these issues shall be inevitable in order to answer the objectives stated in section 1.4.

2.9 Summary

This chapter has brought to the fore the many aspects that impact water service provision to informal settlements of Zambia. The complexities associated with informal areas such as their development process, the lack of an explicit security of tenure status and the inherent variances in the legal frameworks that oversee the existence of these areas have been reviewed. The chapter also looked at the causes of low access to water services in informal settlements from an operational standpoint focusing on the mandated providers, issues of monopoly status, operational incentives, regulation and why service levels are inadequate. The aspect of partnerships as a mechanism to augment service delivery was also reviewed as the post reform legal framework (water supply and sanitation act no28 of 1997) provides for entering into partnerships between the public and private sectors to enhance service delivery. The issue that needs further probing is on what kind or form of partnerships if found suitable would be appropriate.

The review has shown that water service provision to informal areas is a complex and ominous task justifying the need for deeper exploration on how this may

possibly be redressed. The very fact that informal areas develop outside the supervision and control of entities such as local authorities complicates this quest further as has been revealed in the literature that showed that provision of these services after the areas have already developed is very complicated and costly. Also revealed is the aspect of below par performance on the part of the mandated providers to these areas that has resulted in state of service delivery failure. The issue on whether the mandated providers are sufficiently incentivised to serve informal areas will also need to be answered as the literature so far does not seem to be conclusive.

The review therefore strongly underscores the need for further exploration to find possible answers to the many questions that have emerged from the review. The design of an appropriate methodological framework is therefore essential to in order to probe on the many issues that have emerged from the review that require ultimate resolution.

CHAPTER THREE: THE RESEARCH METHODOLOGY

3.1 Introduction

Several aspects have emerged from the previous chapter that underscore the rationale for this study. The emergent issues alluded to clearly provide the platform upon which an appropriate research design can be formulated in order to answer the various questions posed herein. It is in this vein that Kumar (2011: p.5) asserts that, embarking on a research study to find out answers to a question implies that the process being applied:

- is being undertaken within a framework of a set of philosophies;
- uses procedures, methods and techniques that have been tested for their validity and reliability; and
- is designed to be unbiased and objective.

Easterby-Smith et al. (2002) affirm that it is fundamentally essential that one acquires a clear understanding of the main philosophical positions that underlie the research being undertaken prior to embarking on the research design process. Strauss and Corbin (2008) refer to philosophical orientation in terms of a worldview that serves as a platform upon which research methodologies can be developed. This approach is therefore essential since existent philosophical factors have an impact on the overall arrangements which should yield satisfactory outcomes from the research activity.

Kumar (2011) explains that a researcher's philosophical orientation can stem from one of the several paradigms and approaches in research namely; positivist, interpretive, phenomenology, action or participatory, feminist, qualitative, quantitative and lastly, the academic discipline in which the researcher has been trained. Easterby-Smith et al. (2002) extend this argument by giving three main reasons as to why a researcher needs to have a clear appreciation of the philosophical 'leanings' or orientation of a research process as follows:

- i) it helps to clarify the research design process which includes consideration of the type of evidence required; how it ought to be gathered and interpreted and, also how it will provide satisfactory answers to the basic questions being investigated in the research;
- ii) it helps the researcher recognise which designs will work and which will not in the process also revealing the inherent limitations of the various available approaches; and
- iii) it helps the researcher identify and create research designs that may be outside his or her past experience. It may also suggest how the research design may be adapted to counter the constraints that may be posed by different subjects and or knowledge structures.

Crotty (1998) explains that having a clear appreciation of the philosophical stance behind a chosen research process helps to provide a context for the process itself and 'grounds its logic and criteria'.

This principal aim of this chapter therefore shall be first and foremost to put into perspective the philosophical orientation of this research process which will eventually enable the classification of the research and thereafter develop the most appropriate methodological approach.

3.2 The Key Requisite Issues

It is imperative from the onset of this research process that reflection is given on how the questions posed will be dealt with, and what justification will be given for the chosen 'line of attack' to be employed in order to answer the questions. Crotty (1998) articulates this line of thought stating firstly that the justification of the selected research process or *methodology* should be anchored on what assumptions we have about reality and on how we understand or perceive human knowledge, what it entails, and what status should be ascribed to it all of which are referred to as *epistemological* questions. Secondly, he argues that the chosen research process ought to be fully capable of answering the main purposes or objectives of the research.

Several key issues therefore emerge (Crotty, 1998):

- What methods will be used?
- Which methodological process shall govern the methods to be selected and employed?
- What theoretical perspective lies behind or underpins the methodology in question? and
- What epistemology informs the theoretical perspective?

It follows therefore that the research process to be employed has to be predominantly guided and influenced by the researcher's perspective of how human knowledge is construed.

3.3 Pure, Applied or Action Research

Research is defined as *"the systematic process of collecting and analysing information (data) in order to increase our understanding of the phenomenon about which we are concerned or interested"* (Leedy and Ormrod, 2001). The research process therefore primarily seeks to explain, describe or explore the phenomenon identified for study so as to ultimately help change problematic social circumstances (Marshall and Rossman, 1995). There are mainly three different research types namely: pure; applied and action research which are distinguished primarily by the outcomes that are assumed to emerge (Easterby-Smith et al., 2002).

- i) **Pure Research** – This is research that is principally concerned with the production of new knowledge that can ultimately result in theoretical²⁴ development which may or may not have practical implications (Sarantakos, 2005, Easterby-Smith et al., 2002). There are three main outcomes that are derived from the pure research process; firstly **discovery** which refers to the situation when a **totally new idea** or explanation emerges from empirical research, secondly **invention**,

²⁴ A **theory** is defined by Leedy and Ormrod (2001) as "an organised body of concepts and principles intended to explain a particular phenomenon."

whereby a new technique, method or idea is created to deal with a particular kind of problem and lastly **reflection** which refers to a situation whereby an existing theory, technique or group of ideas is re-examined, most probably in a different organisational or social contextual setting (Easterby-Smith et al., 2002).

- ii) **Applied Research** – This is research that places a strong emphasis on the application of relevant existent theories with the sole intention of solving specific problems that have been identified by policy makers (clients). It usually involves working with clients who have identified the problem (Leedy and Ormrod, 2001; Easterby-Smith et al., 2002; Bullock et al., 1992).
- iii) **Action Research** – This is a form of research that pursues action (change) and research (knowledge or understanding) at the same time. It pursues a participative approach in that the subjects of the research are actively involved in the research process within a mutually accepted ethical framework (Easterby-Smith et al., 2002; Sarantakos, 2005; Bloor and Wood, 2006).

It was stated in chapter one that the prime intention of this research shall be to generate some new theoretical insights on the aspect of water service provision to informal settlements in urban areas of Zambia. This research therefore fits the description given for the **pure research** process as it is principally concerned with the production of new knowledge that can ultimately result in theoretical development which may have practical implications (Easterby-Smith et al., 2002; Kumar, 2011). The findings may also have important policy implications in that they may encourage policy makers to consider reviewing the existing policy framework overseeing informal settlement water supply in Zambia (Yin, 2003; Kumar, 2011). There is also a large component of **applied research** in that there is an aspect of providing solutions to an existing operational problem or the enhancement of understanding of a phenomenon (Easterby-Smith et al., 2002; Kumar, 2011). This research can therefore be classified as a **hybrid or cross**

between the pure and applied research processes as it incorporates elements that are inherent with both research processes.

3.4 The Nature of Reality: Ontology

One cardinal issue that a researcher is supposed to comprehend and eventually harness has to do with his or her perception of '*the nature of reality*' which in this case refers to whether one perceives the social world as an entity that is external to social actors or as something that people are in the process of fashioning (Bryman, 2004). When the social world is viewed as an entity that exists externally, it follows that, *its properties should be measured using objective methods, rather than being inferred subjectively through sensation, reflection or intuition* (Easterby-Smith et al., 2002: p.28). The opposing 'camp' that espouses the view that reality is determined by people requires the researcher to focus on what people, individually and collectively are feeling and thinking. In other words, the researcher ought to give plausible explanations on why people have different experiences (Easterby-Smith et al., 2002; Bryman, 2004; Mason, 2002). This process of self-inquiry on how the social world should be viewed is referred to as *ontology*. Put simply, ontology asks what the nature of reality is; whether reality is objective, constructed or subjective and; what a particular research process should focus on (Sarantakos, 2005).

It is fundamentally essential therefore that the ontological perspective on which a proposed research is to be anchored on and its attendant implications are clarified prior to embarking on the research process. Mason (2002: p.14) emphasises this point arguing that, "*only once it is recognised that alternative ontological perspectives might tell different stories, that a researcher can begin to see their own ontological view of the social world as a position which should be established and understood, rather than the obvious truth which should be taken for granted*". The ontological orientation of this research is discussed in section 3.6.

3.5 The Nature of Knowledge: Epistemology

Another key issue requiring consideration concerns the rules and principles that enable us decide on whether and how social phenomena can be known and how this acquired knowledge can be demonstrated (Mason, 2002). This position can be realigned through by asking the following questions (Sarantakos, 2005):

- i) how do we know what we know?;
- ii) in what way should reality be known to us?; and
- iii) what kind of knowledge is the research looking for?;

Questions that focus on what we regard as knowledge or evidence of things in the social world are referred to as *epistemological* questions (Mason, 2002). Epistemology is defined as “*a branch of philosophy that studies the nature of knowledge and what constitutes acceptable knowledge in a field of study*” (Saunders et al., 2007: p.597) which agrees with the explanation of epistemology by Crotty (1998) who describes it as a process that is concerned with the nature of knowledge, its possibility, scope and general basis. It follows therefore that a researcher should first and foremost identify the adopted epistemological stance and thereafter give a justification on the basis for its adoption.

Crotty (1998) identifies three main epistemological stances namely:

- **objectivism** - which holds that meaning, and therefore meaningful reality exists as such apart from the operation of any consciousness;
- **constructionism** - which rejects the objectivist standpoint instead espousing that truth or meaning come into existence in and out of our engagement with the realities in our world or that meaning is not discovered but *constructed*.
- **subjectivism** - which holds that meaning does not come out of or emerge from an interplay between subject and object but is imposed on the object by the subject (the object does not make any contribution to the generation of the meaning).

The epistemological orientation of this research is discussed in section 3.6.

3.6 Paradigms of Research: Positivism versus Social Constructionism

The descriptions of ontology and epistemology point to an existence of distinct research groupings or camps. Sarantakos (2005) explains this phenomenon by stating that the ontological and epistemological prescriptions of social research are packaged in *paradigms* which guide everyday research. A paradigm is a cluster of beliefs and dictates (or set of propositions) which for scientists in a particular discipline influence what should be studied, how research should be conducted and how the results should be interpreted. It also reveals what is important, legitimate, and reasonable and provides the arena in which the logic and structure of the research are embedded (Kuhn, 1970; Sarantakos, 2005).

The two main contrasting philosophical positions that underlie research designs are referred to as *positivism* and *social constructionism* (Easterby-Smith et al., 2002). Positivism is defined as “*an epistemological position that advocates the application of the methods of the natural sciences for the study of social reality and beyond*” (Bryman, 2004: p.11). The key idea of positivism according to Easterby-Smith et al., (2002: p.28), is that, “*the social world exists externally, and that its properties should be measured through objective methods, rather than being inferred subjectively through sensation, reflection or intuition*” which from an ontological perspective means that reality is external and objective. Constructionism on the other hand is “*an ontological position that asserts that social phenomena and their meanings are continually being accomplished by social actors*” (Bryman, 2004: p.17). It focuses on ways that people make sense of the world especially through sharing their experiences with others via the medium of language. Locke (2001) asserts that researchers that employ the interpretive methodological approach primarily focus on particular situated actors whom they construe as composing meaning out of events and phenomena through prolonged processes of interaction that involve history, language and action and that social reality should not be treated as a ‘given’, but is built up over

time through shared history. Table 8 below gives the distinguishing characteristics and implications of positivism versus social constructionism

Table 8: Distinguishing characteristics and implications of positivism and social constructionism

Aspect	Positivism	Social Constructionism
<i>The Observer</i>	Must be independent	Is part of what is being observed
<i>Human Interests</i>	Should be irrelevant	Are the main drivers of science
<i>Explanations</i>	Must demonstrate causality	Aim to increase general understanding of the situation
<i>Key purpose of the research</i>	<ul style="list-style-type: none"> • To explain and predict • To confirm and validate • To test theory 	<ul style="list-style-type: none"> • To describe and explain • To explore and interpret • To build theory
<i>Research process through</i>	Hypotheses and deductions	Gathering rich data from which ideas are induced
<i>Nature of the research process</i>	<ul style="list-style-type: none"> • Focused • Known variables • Established guidelines • Static design • Context free • Detached view 	<ul style="list-style-type: none"> • Holistic • Unknown variables • Flexible guidelines • Emergent design • Context bound • Personal view
<i>Concepts</i>	Need to operationalised so that they can be measured	Should incorporate stakeholder perspectives
<i>Methods of data collection</i>	<ul style="list-style-type: none"> • Representative, large sample • Standardised instruments 	<ul style="list-style-type: none"> • Informative, small sample • Observations, interviews
<i>Form of Analysis</i>	Deductive	Inductive
<i>Generalisation Through</i>	Statistical probability	Theoretical abstraction
<i>Communication of findings</i>	<ul style="list-style-type: none"> • Numbers • Statistics, aggregated data 	<ul style="list-style-type: none"> • Words • Narratives, individual quotes

Constructed from Easterby-Smith et al. (2002) and Leedy and Ormrod (2001)

Having identified and outlined the main distinguishing characteristics between positivism and social constructionism it is essential at this juncture to note that difficulties do when a researcher attempts to draw a distinct line between the two approaches. Crotty (1998: p.15) asserts that what is problematic is when one attempts to be “*at once objectivist and constructionist (or subjectivist) or to say that there is objective meaning and, in the same breath, to say that there is no objective meaning*” which is very contradictory.

It is now essential at this juncture to commence the process of selecting the most appropriate methodological approach that can be used to obtain answers to the questions posed in this research. This process begins by establishing where this “research lies” both from an ontological and epistemological perspective.

Easterby-Smith et al. (2002: p.33) made an attempt to summarise “*the overlapping discussion of ontological positions in science and the social sciences, and to indicate a link to epistemological positions*”.

Table 9: Ontologies and Epistemologies in Science and Social Science

Ontology of science	Traditional Realism	Internal Realism	Relativism	
Ontology of social science		Representationalism	Relativism	Nominalism
<i>Truth</i>	Is established by correspondence between observations and phenomena	Is determined through verification of predictions	Requires consensus between different viewpoints	Depends on who establishes it
<i>Facts</i>	are concrete	are concrete but cannot be accessed directly	depend on the viewpoint of the observer	are all human creations
Epistemology of science	Positivism		Relativism	
Epistemology of social science		Positivism	Relativism	Social Constructionism

Source: Easterby-Smith et al., (2002)

The “direction” that a researcher embarks on is mainly influenced by the epistemological position that a researcher chooses to accept. Easterby-Smith et al. (2002) in contrasting the two main research “camps” argues that in the positivist paradigm, it is assumed that there is reality which exists independently from the researcher, hence the key role of the researcher is to identify the pre-existing reality mainly through the design of experiments in which key factors are measured precisely in order to test pre-determined hypothesis. For the social constructionist paradigm they argue that the researcher begins from a standpoint that does not assume any pre-existing reality. The researcher’s key role is to

garner an understanding of how people invent structures and ‘makes sense’ of what is going on around them using techniques such as conversations between people as they make sense or create their own meanings of their experiences. The two contrasting research paradigms are illustrated in Figure 12 below with respect to the role of the researcher.

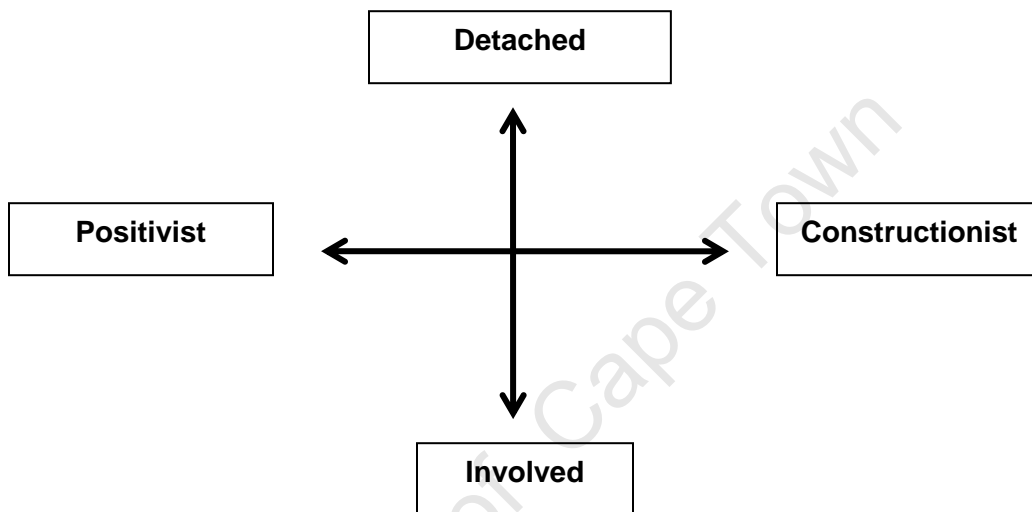


Figure 12: The Matrix of Research Philosophies: (Source: Easterby-Smith et al., 2002)

This illustration attempts to firstly distinguish the ontological divide between the two research paradigms which is rooted on the role of the researcher which varies from detachment or none involvement to full involvement. Crotty (1998: p.67) argues that the positivist approach “*would follow methods of the natural sciences and, by way of allegedly value-free **detached observation**, seek to identify universal features of humanhood, society and history that offer explanations and hence control predictability*”. Locke (2001: p.9) on the other hand states that researchers working in the constructivist paradigm “*focus on particular situated actors who they construe as composing meaning out of events and phenomena through prolonged processes of interaction that involve history, language and action*”. In summing up these divergent positions Easterby-Smith

et al., (2002) conclude that one of the most critical factors which influences or affects the choice of the research methods is the worldview that the particular researcher holds on the most optimal approach for knowledge extraction and acquisition.

3.7 Classification of the Research

The key questions posed in this research dwell on issues pertaining as to **how effective** the existent institutional mechanisms for water supply have been in urban low income areas of Zambia. Furthermore the research seeks to establish if there any inherent shortcomings in the existent policy, legal and institutional frameworks with a view of suggesting improvements. The inquiry process of this research shall in the first instance intensely focus on existing processes and their structural characteristics. The information acquired will be heavily reliant on people's descriptions of what they have experienced from a service delivery perspective. Their descriptions will have to be '*made sense out of*' or interpreted and then placed into general categories and thereafter '*some plausible explanations*' of their experiences or what is happening in their environment would have to be made. Leedy and Ormrod (2001) illustrate this approach to data collection in what they term the 'data analysis spiral' shown in Figure 13.

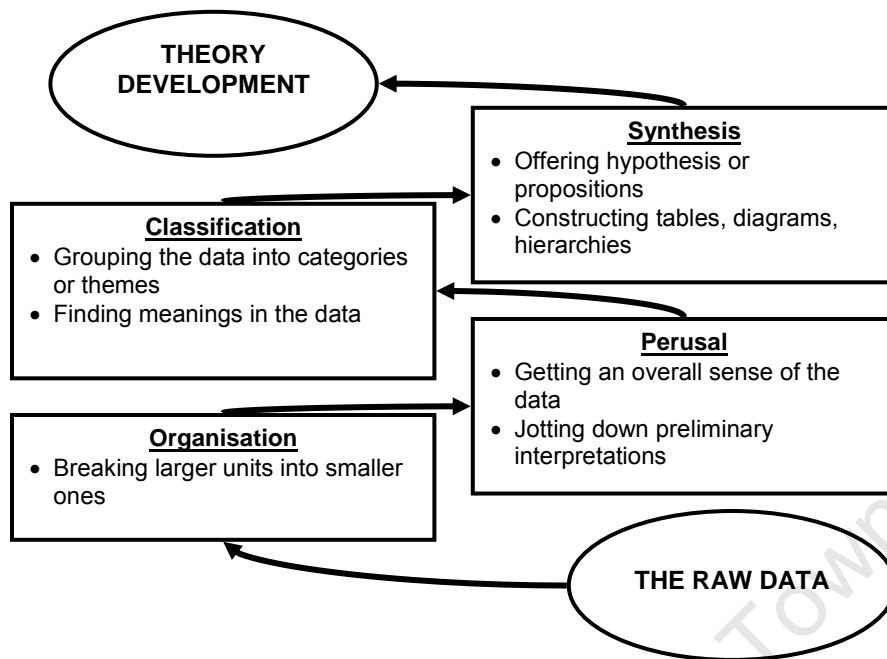


Figure 13: The Data Analysis Spiral by Leedy and Ormrod (2001)

It is clear therefore that this research is heavily inclined towards the **social constructionist paradigm** where meanings or social reality will be composed or generated primarily on the experiences encountered by people that is, how the events encountered mean to them and how they adapt their behaviour in light of these meanings (Locke, 2001). From an **ontological perspective** the research ought to therefore be classified as **constructionist** whilst from an **epistemological standpoint** it fits within the **interpretivist** paradigm. Both of these positions are in tandem with the principles that are embedded in the **qualitative methodology** described by Easterby-Smith et al., (2002: p.85) as an “array of interpretive techniques which seek to describe, decode, translate and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world”. The overarching methodology²⁵ for this research is therefore **qualitative**.

²⁵ A **methodology** is the research strategy that is used to translate the ontological and epistemological principles into guidelines that logically illustrate how the research is to be conducted (Sarantakos, 2005: p.30).

3.8 Qualitative vs. Quantitative Research Paradigms

A research design is a comprehensive framework for the collection procedures and thereafter analysis of data for the problem under investigation (Bryman, 2004; Leedy and Ormrod, 2001). Easterby-Smith et al., (2002) assert that research designs are about organising research activity, including the collection of data, in ways that are most likely to achieve the research aims and that the researcher has at his or her disposal several approaches to choose from. Leedy and Ormrod (2001) suggest that the selection on which research approach to use should largely be influenced by the research problem that is to be addressed. This study principally seeks to explore the feasibility and viability of alternative mechanisms that can be employed to provide water services to urban informal settlements in Zambia as the current mechanisms are not fully effective. It is fundamentally essential from the onset that the various stakeholders who are both directly and indirectly associated with water provision to informal settlements are consulted so as to acquire a deeper understanding of the problem under investigation and also on how they believe the problem could resolved.

The two main research paradigms are the quantitative and qualitative approaches. Quantitative research is used to answer questions about relationships among measured variables with the key purpose of **explaining, predicting** and **controlling phenomena** whilst qualitative research is used to answer questions about the complex nature of phenomena, often with the purpose of **describing** and **understanding the phenomena** from the participants' point of view (Leedy and Ormrod, 2001). The distinguishing characteristics are given in Table 10 below.

Table 10: Distinguishing characteristics between quantitative and qualitative approaches

Question	Quantitative	Qualitative
<i>What is the purpose of the research?</i>	<ul style="list-style-type: none">•To explain and predict•To confirm and validate•To test (or verify) theory	<ul style="list-style-type: none">•To describe and explain•To explore and interpret•To build (or generate) theory

Question	Quantitative	Qualitative
<i>What is the nature of the research process?</i>	<ul style="list-style-type: none"> • Focused • Known variables • Established guidelines • Static design • Context free • Detached view 	<ul style="list-style-type: none"> • Holistic • Unknown variables • Flexible guidelines • Emergent design • Context bound • Personal view
<i>What are the methods of data collection?</i>	<ul style="list-style-type: none"> • Representative, large sample • Standardised instruments explain and predict 	<ul style="list-style-type: none"> • Informative, small sample • Observations, interviews
<i>What is the form of reasoning used in analysis?</i>	<ul style="list-style-type: none"> • Deductive analysis 	<ul style="list-style-type: none"> • Inductive analysis
<i>How are the findings communicated?</i>	<ul style="list-style-type: none"> • Numbers • Statistics, aggregated data • Formal voice, scientific style 	<ul style="list-style-type: none"> • Words • Narrative, individual quotes • Personal voice, literary style

Source: Leedy and Ormrod (2001)

It has already been established based on the philosophical orientation of this research that the overarching methodology shall be qualitative. The foremost rationale for employing the qualitative approach is because the data to be collected will be reliant on the experiences garnered by the affected individuals with regard to water access. These outputs will then have to be interpreted using inductive techniques and explained by way of theoretical propositions.

The literature review in Chapter 2 provided some insight but did not fully explain the phenomenon under investigation. A qualitative methodology commonly used to generate theory where *little is already known* or to *provide a 'fresh slant' on existing knowledge* is called *grounded theory* (Goulding, 2002). This methodology has been categorised to fall under the inductive domain since it begins with the study of a range of individual cases and extrapolates them to form a conceptual category (Charmaz, 2006), which literary refers to “moving up from the particular to the detailed descriptive to the more abstract, conceptual level” (Bryant and Charmaz, 2007: p.15). A detailed breakdown of this methodology is presented in the next section.

3.9 The Grounded Theory Methodological Approach

Grounded theory is a qualitative research approach that enables a researcher to generate theory from empirical data which is systematically gathered and analysed using clear and precise guidelines for the verification and validation of the findings during the research process (Bryman, 2004; Goulding, 2002; Locke, 2001). It was developed by two American scholars Barney G. Glaser and Anselm L. Strauss in the 1960's, who conducted a study of hospital staff's care of terminally ill patients using participant observation (Silverman, 2006; Locke, 2001; Glaser and Strauss, 1967). Glaser trained at the Columbia University which had a strong tradition of formal theorising, verification and quantitative methods whilst Strauss trained at the University of Chicago which was renowned for critical and qualitative approaches such as observation, intensive interviewing and pragmatic theorising. Goulding (2002: p.40) however notes that despite this evident divergence amongst the two scholars, they both shared a belief in the following:

- the need to get out in the field if one wants to understand what is going on;
- the importance of theory grounded in reality;
- the nature of experience in the field for the subjects and researcher as continually evolving;
- the active role of persons in shaping the worlds they live in through the process of symbolic interaction;
- an emphasis on change and process and the variability and complexity of life; and
- the interrelationship between meaning in the perception of subjects and their action.

It was labelled as grounded theory primarily to reflect the source of the developed theory which was ultimately grounded or closely linked to the behaviour, words and actions of those under study (Goulding, 2002).

The key attributes of this approach are (Bryant and Charmaz, 2007; Sarantakos, 2005; Bryman, 2004; Goulding, 2002; Leedy and Ormrod, 2001; Glaser and Strauss, 1967):

- it questions the notion of starting research with already established prescriptive guidelines;
- it aims to develop theory through the research and not subject the research to theory;
- it is most appropriate in areas where theories are not available or the field is dominated by many contradictory research positions;
- it encourages researchers to continually interact with the data collected;
- there is a close relationship between data collection, analysis and the eventual emergent theory – it should be parsimonious;
- it is iterative that is, data collection and analysis proceed in tandem, repeatedly referring back to each other (constant comparison) until saturation is attained;
- it employs a purposive sampling procedure guided by the information collected during the study and completed when theoretical saturation is attained;
- it employs a variety of methods such as observation, interviews and documentary analysis;
- the research process is not guided by the researcher but by the theory that emerges from the research;
- it requires the recognition that enquiry is always context bound and facts should be viewed as both theory laden and value laden; and
- it can be presented in the form of a set of propositions or a running theoretical discussion, using conceptual categories and their properties.

Figure 14 illustrates the main stages and characteristics of the grounded theory process.

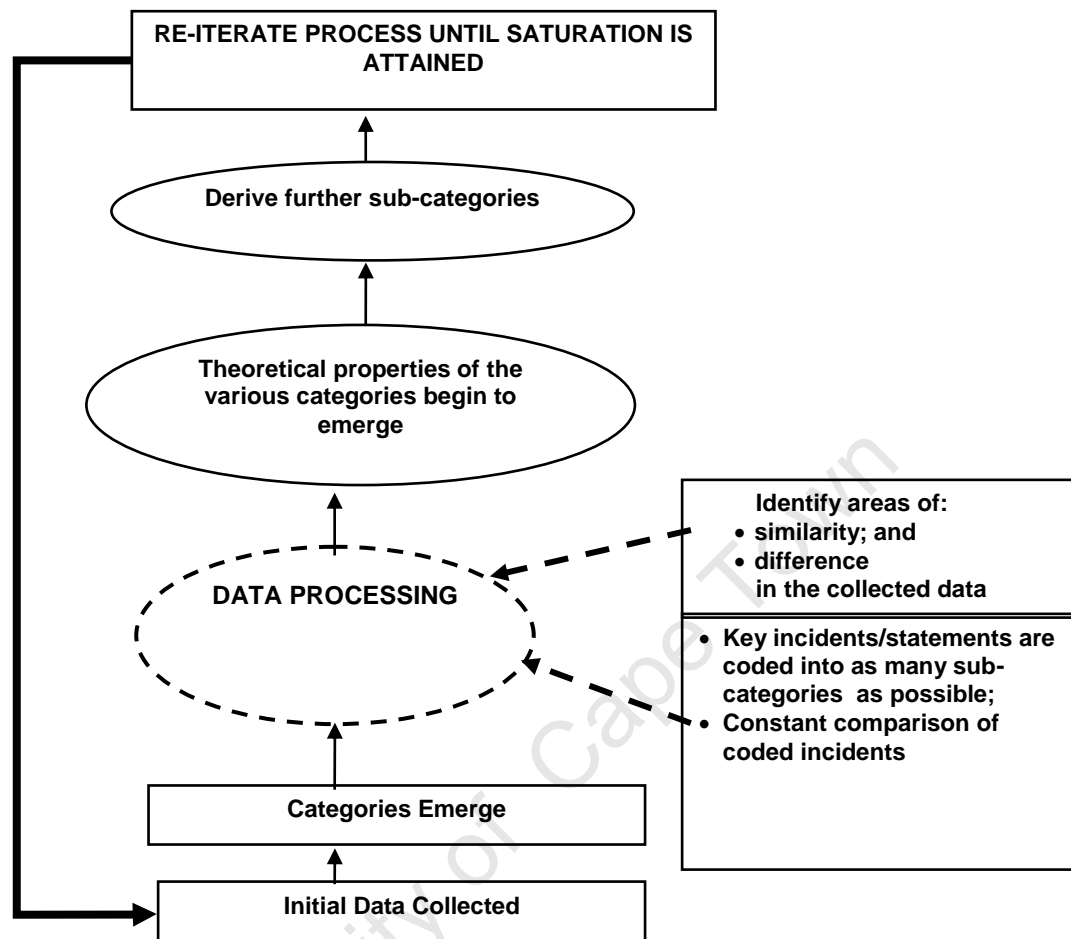


Figure 14: The Grounded Theory Process key stages and characteristics (Compiled from: Charmaz, 2006; Kelle, 2007; Locke, 2001)

Grounded theory differs from other forms of qualitative research in that it allows for sourcing of data from a much wider range of data including company reports, secondary data and even statistical analysis which is quantitative technique (Goulding, 2002). Furthermore, grounded theory strives to reveal conceptual linkages in the data collected whilst most qualitative methodologies do not. Glaser and Strauss (1967) explain this position asserting that theory which is based or closely linked to data can usually not be completely refuted by more data or replaced by another theory, since it is too '*intimately linked to the data*' and that the theory is destined to last despite its inevitable modification and reformulation. They further argue that this methodology helps to prevent the

opportunistic use of theories that may have a 'dubious fit' and working capacity in situations such as:

- a researcher may attempt to align his or her findings with previously developed theory in order to verify the data collected and not to generate an explanation of them;
- a researcher easily finds examples for 'dreamed-up' speculative or logically deduced theory after an idea has occurred. Due to the weak or non-existent direct relationship between the idea and the cited example(s), the developed theory in such cases assumes a richness of detail it did not earn.

In further defence of this approach, Glaser and Strauss (1967) claimed that researchers had always generated theories from qualitative data, but did not explicitly refer to the process as theory generation since they were too concerned with formulating their ideas within the sphere of verification. They argued that there was no fundamental clash between the purposes and capacities of the qualitative and quantitative methodological approaches as they have the ability to supplement each other during a research process. The key point of divergence that they identified was on whether there should be sole emphasis placed on either verification or generation of theory.

3.10 The Key Output – Substantive or Formal Theory

Strauss and Corbin (2008) describe a theory as a set of well-developed categories (themes or concepts) that are systematically interrelated through statements of relationship to form a theoretical framework that explains some phenomenon. Glaser and Strauss (1967: p.3) enumerated the inherent features that the developed theory should possess:

- enable prediction and explanation of behaviour;
- be useful in theoretical advances in sociology;
- be applicable in practice;
- provide a perspective on behaviour;
- to guide and provide a style for research on particular areas of behaviour;

- should provide clear enough categories and hypothesis so that, crucial ones can be verified in present and future research.

The statements made by Glaser and Strauss strongly underscore the appropriateness of this methodology for this research which has as its key area of inquiry the conducting of an in-depth examination on the existing modes of water service delivery in informal settlements of Zambia and determining their level of effectiveness, viability and sustainability. The desired outputs will:

- provide an explanation on the approaches (behavioural patterns) inherent in the existing modes of water service delivery to informal settlements;
- indicate their level of applicability;
- serve as a platform upon which further inquiries into this problem area may be effected;
- enable a better understanding of the problem under investigation.

Glaser and Strauss (1967: p.32) outline two main types of theory that can be generated using the grounded theory approach. These are:

- **Substantive theory** which is a theory developed for a substantive or empirical area of sociological inquiry such as patient care, race relations, professional education, delinquency, or research organisations;
- **Formal theory** which is a theory developed for a formal or conceptual area of sociological inquiry, such as stigma, deviant behaviour, formal organisation, socialisation, status congruency, authority and power reward systems or social mobility.

Barney and Glaser (1967: p.34) asserted that, “a *substantive theory relevant to a given substantive area is the result in most instances, of believing that formal theories can be applied directly to a substantive area, and will supply most or all of the necessary concepts and hypothesis that may emerge*”. Locke (2001: p.35) also explains that substantive theory is prior to formal theory and that it is closely linked to the practice domain and that it can provide a linkage to more formal theory by working empirically to develop conceptual categories at higher levels of abstraction and generality.

In this research the principal focus is on investigating the probable adoption of new mechanisms for water service-provision for low income communities of Zambia using feasibility, viability and acceptability as the main basis of inquiry. It follows that the output is heavily slanted towards **substantive theory**, as it shall explain phenomena closely associated with reality.

3.11 Glaserian vs. Straussian approaches to grounded theory

A point of conflict emerged between Barney Glaser and Anselm Strauss, the originators of the grounded theory methodological approach. Glaser endorsed the position that held that, researchers should start with no pre-suppositions and should allow ideas to emerge from the data alone, in other words, *'the generated theory should only explain the phenomenon under study'*. Strauss on the other hand in collaboration with Juliet M. Corbin moved the methodology more towards an approach that favoured verification based on excessive use of coding matrices (Goulding, 2002; and Easterby-Smith et al., 2002). In comparing the two approaches, Locke (2001: p.64) asserts that, Glaser's interpretation of the necessary operational practices *"tend towards more openness, flexibility and more parsimony in the elaboration of the necessary steps"* whilst Strauss's interpretation of the approach *"tends towards increased prescription and formal elaboration of the operational procedures"*.

Table No 11 highlights the differences between the so called Glaserian and Straussian approaches of grounded theory.

Table 11: Glaserian vs. Straussian approaches in Grounded Theory

Glaserian Approach	Straussian Approach
<ul style="list-style-type: none"> • The researcher should start without any presuppositions • Output is theory development devoid of verification • Theory should only explain the phenomenon under investigation • Ideas should emerge from the data alone • Incorporates only open and selective coding 	<ul style="list-style-type: none"> • The researcher should familiarise with the area of inquiry prior to commencement of the research to foster clarity • The developed theory should have a thick conceptual density which should go beyond thick descriptions • Incorporates a strict and complex process of systematic coding namely open, axial and selective coding

Glaserian Approach	Straussian Approach
<ul style="list-style-type: none"> • Data should be fractured i.e. examined 'line by line' • Emphasises the use of comparative techniques • Objects to the use of 'interrogative' phrases during questioning • Objects to the use of comparative thinking as they remove the researcher away from the simplicity and restraint of interpreting and comparing data in order to identify what is similar and what is different 	<ul style="list-style-type: none"> • A sentence should be treated as a 'line' • Advocates for the use of 'interrogative' questioning using words such as; who? what? why? when? and how much? In order to open the data to possible interpretations • Advocates for the use of comparative thinking in order to 'open up' the data

Compiled from Goulding (2002); Easterby-Smith et al., (2002); Locke (2001)

A key area of agreement between the founders of grounded theory worth noting was that which espoused that theory generated using this approach should be parsimonious or 'true to the data'. This they argued was achievable since the data is continually subjected to a process of constant comparisons during the collection and analysis. This point is summarised in Glaser and Strauss (1967: p.110-111) thus: *"with the reduction of terminology and consequent generalising, forced by constant comparisons (some comparisons can at this point be based on the literature of other professional areas), the analyst starts to achieve two major requirements of theory namely – parsimony of variables and formulation, and scope in the applicability of the theory to a wide range of situations while keeping a close correspondence of theory and data"*.

The Straussian approach is preferred in this study and the rationale for its selection is articulated in section 3.12.

3.12 Justification of the Straussian grounded theory approach for this research

Table 11 outlines key fundamental differences between the Glaserian and Straussian approaches to the grounded theory methodology. These are analysed as follows.

i) The role of theoretical knowledge

One area of difference in the two approaches is that of the role of prior theoretical knowledge. The Glaserian view on this issue advocates that the researcher should approach the research arena without any research questions or problems but a broad theoretical background that is not explicit from the onset. The Straussian view on the other hand encourages the researcher to utilise a theoretical framework that is based on a certain understanding of human action – the researcher must acquire a level of familiarity with the area of inquiry prior to commencement of the research and that pre-conceptions are inevitable (Kelle, 2007; Easterby-Smith et al., 2002). The use of previous theoretical knowledge based on a sound methodological and epistemological platform can help a researcher to distinguish between notions that ‘force’ the data and concepts that ‘support the emergence’ of new categories (Kelle 2007: p.206).

ii) **Verification**

The grounded theory approach is purely inductive and the output is only generated theory devoid of any verification according to the Glaserian view (Goulding, 2002). This position is however disputable since the grounded theory approach advocates for a strong interplay between the data and emergent theory – a process that invokes a constant or continual comparison²⁶ between the emerging concepts and field data ultimately leading to theoretical saturation which in itself is a robust form of validation (verification).

iii) **Coding**

The Glaserian approach emphasises the **interpretive, contextual and emergent** nature of theory development reliant on an ‘open coding’ approach, which starts by **scrutinising** the field-note or interview or other relevant document ‘**line by line**’ or ‘**word by word**’ with the eventual aim of producing concepts that ‘fit the data’ (Kelle, 2007). The Straussian approach insists on the excessive use of highly complex but systematic coding techniques such as axial coding which Charmaz (2006: p.186) describes as “*a type of coding that treats a*

²⁶ The **constant comparison** method is a method of analysis that generates successively more abstract concepts and theories through inductive processes of comparing data with data, data with category, category with category, and category with concept. Comparisons then constitute each stage of analytical development (Charmaz, 2006: p.187)

category as an axis around which the analyst delineates relationships and specifies the dimensions of this category. A major purpose of axial coding is to bring the data back together again into a coherent whole after the researcher has fractured them through line by line coding”.

The Straussian approach in comparison to the Glaserian approach presents itself as much more pragmatic. The significance of placing much emphasis on prior theoretical knowledge helps to identify with *relative ease* new trends and patterns emerging from the data as the researcher’s ability to distinguish or ‘sort’ the data is enhanced. During this process, the theoretical knowledge assumes the role of being another informant (Goulding, 2002). Furthermore, the Straussian approach through its coding paradigm (axial coding) presents itself as a less cumbersome coding procedure as it revolves around ‘one category at a time’ i.e. the category forms the ‘axis’ around which further coding and category building can be done which may eventually become the core category.

The Straussian approach is therefore adopted for use in this study in preference to the Glaserian approach primarily due to its standpoint on the three main critical factors outlined namely the *role of theoretical knowledge, verification of emergent data* and the style of *coding employed for sorting out* the emerging data.

3.13 The Research Design

A research design is defined as a “*procedural plan that is adopted by the researcher to answer questions validly, objectively, accurately and economically*”. Through a research design, a researcher decides and articulates the study design to be used, how the information will be collected from the respondents, how the respondents are to be selected, how the information collected will be analysed and finally how the findings will be communicated (Kumar, 2011). The grounded theory methodological approach as illustrated in Figure 15 has been adopted for use in this study. In arriving at this decision, two key aspects had to be appreciated namely, the epistemological orientation (which is a way of understanding and explaining how we know what we know), which for this

research was determined to be *constructionist* and the second aspect which is concerned about the researcher's outlook about reality (also termed as the theoretical perspective) which for this research was determined to be *interpretivist* (see Figure 16 that explains the four basic elements of a research process). The qualitative data collected from this approach will therefore facilitate *theory development or generation* (i.e. substantive theory) which will be used to explain phenomena under investigation which in this case is what viable alternative mechanisms can there be for water service-provision in low income communities of Zambia.

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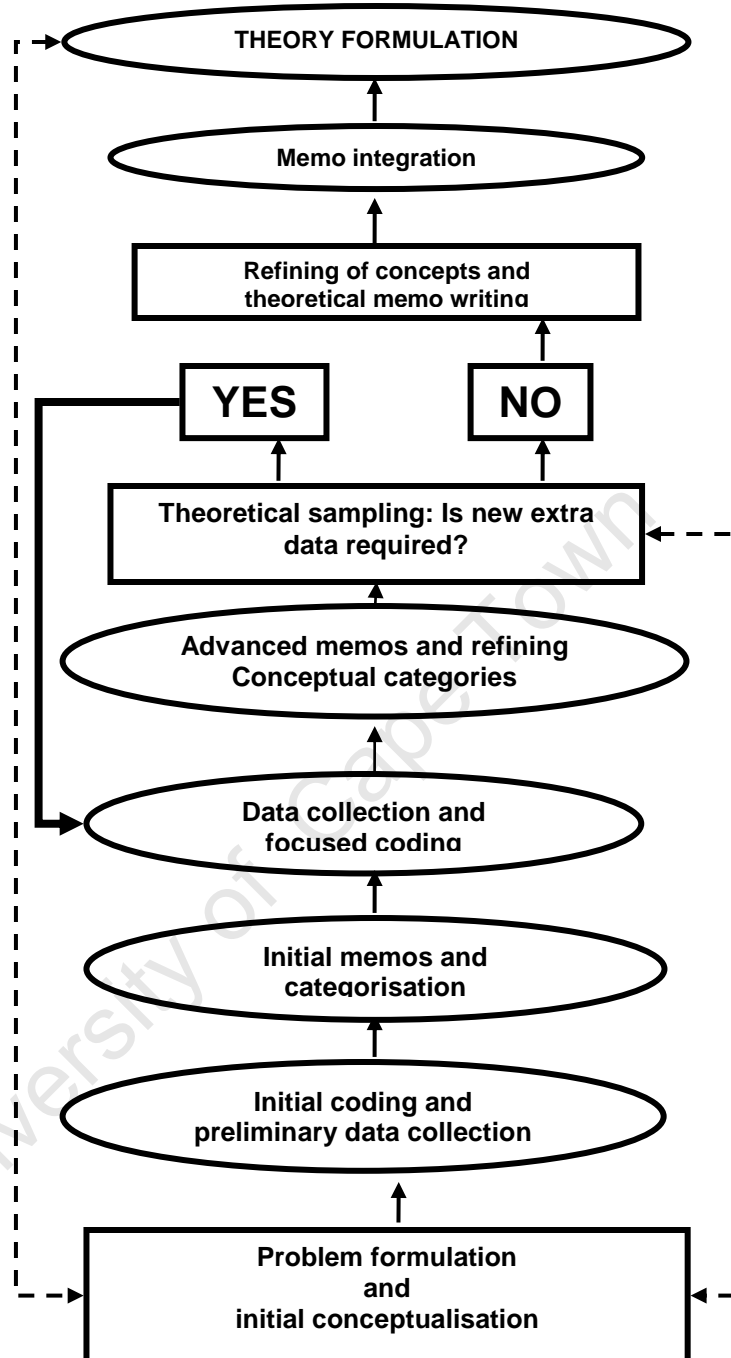


Figure 15: The Grounded Theory Process adapted from Charmaz (2006)

Having given a justification of why grounded theory has been adopted as the overarching methodological approach for this study, it is imperative at this juncture to clearly identify and outline the techniques or procedures (methods) that shall be used to gather and analyse the data to be collected. Crotty (1998) emphasises that it is absolutely essential that the methods to be employed are described as specifically as possible.

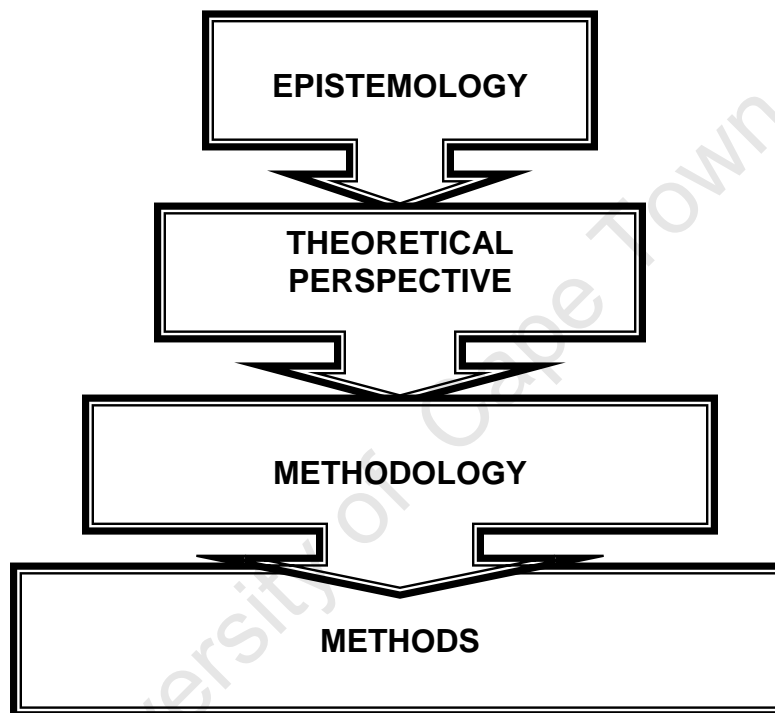


Figure 16: The four basic elements of a research process from Crotty (1998)

From the illustration it can be noted further that the *theoretical perspective* informs the *methodology* and finally the *methodology* informs the methods of preference, which are the techniques or procedures that are to be used to gather and analyse data.

3.14 The Methods

The previous section outlined the overall framework for the collection and analysis of data, it is now imperative that the various techniques to be employed for data collection are explained in detail. Charmaz (2006) contends that the preferred methods ought to enable the researcher to view the world from varying perspectives, which may be construed as an attempt to garner an in-depth understanding of the various different aspects of the phenomena under study.

This study principally aims to explore the feasibility and viability of alternative modes of water service provision to poor urban (informal settlements) communities in Zambia which if employed can improve upon the existing levels of access. It has argued in the preceding sections that the inquiry process shall be heavily reliant on people's descriptions of what they have experienced from a service delivery perspective, thereby inclining this research towards the social constructionist paradigm whose methods aim at interpreting, describing, decoding and coming to terms with the meaning of naturally occurring phenomena in the social world (Easterby-Smith et al., 2002).

There are two main approaches to gathering information about a situation, person, problem or phenomenon. These can be either (Kumar, 2011):

- acquisition of data from primary sources; or
- acquisition of data from secondary sources.

These approaches are hierarchically illustrated in Figure 17.

Data from primary sources

One key criterion that influences the choice of a method for data collection is the socio-economic and demographic characteristics of the study population i.e. the educational level, age structure and socio-economic status (Kumar, 2011). It is absolutely essential that the respondents fully understand and comprehend the purpose and significance of the study. Examples of primary sources of data can include finding out '**first-hand**' the attitudes of a community towards health

services, a social programme and quality of public service delivery (Kumar, 2011).

Data from secondary sources

Data collected by other persons and or entities other than the researcher but is found to be useful for the study is termed as secondary data (Sarantakos, 2005; Kumar, 2011).

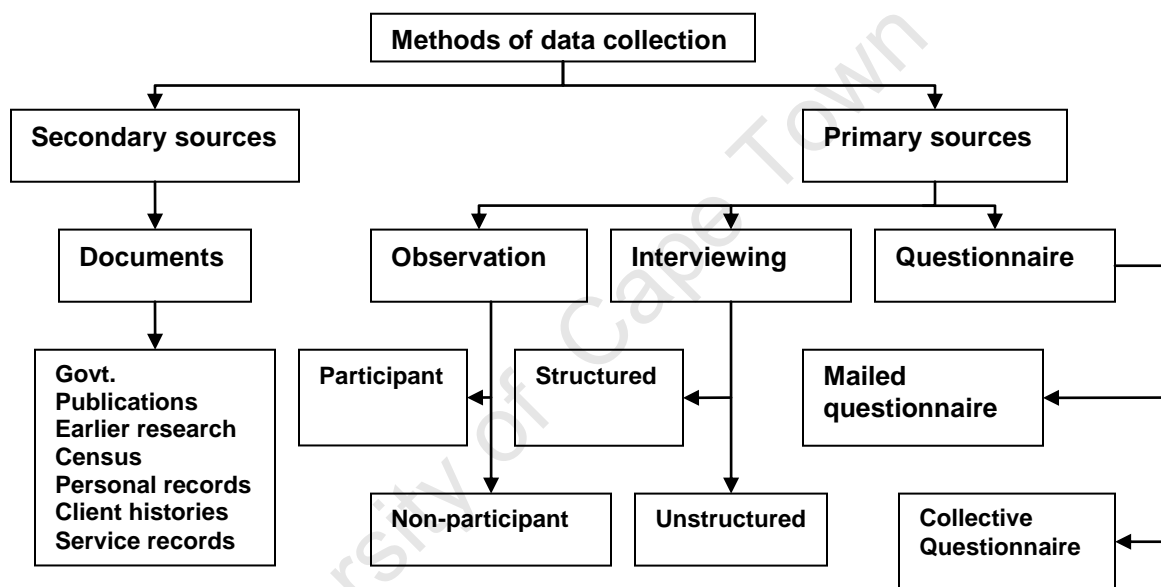


Figure 17: The various methods of data collection (Source: Kumar, 2011)

The principle role of data sought from secondary sources in this study shall be to essentially supplement information acquired from the focus group discussions and interviews as it will not be possible to garner a full understanding of the organisational nature of the existing service delivery mechanisms from the interviews and focus discussions alone (Strauss and Corbin, 2008).

This study uses a combination of several methods (method triangulation) also termed as a 'mixed-method design' to probe the different aspects of the

phenomena. The approach enabled the investigation of particular aspects from more than one single perspective which enriched knowledge and allowed for the 'verification of validity' (Sarantakos, 2005). The methods employed in this study are illustrated in Figure 18 which outlays the chronological sequence of the methods to be employed within the overall grounded theory methodological framework.

The first step is the literature review process which shall serve to develop a theoretical foundation which is in tandem with the Straussian view of grounded theory that "encourages the researcher to utilise a theoretical framework that is based on a certain understanding of human action i.e. the researcher must acquire a level of familiarity with the area of inquiry prior to commencement of the research" (Kelle, 2007; Easterby-Smith et al., 2002). The second step is the focus group discussions followed by the third and last step; the intense interviewing of purposively selected key informants, a step that may be repeated until no new 'insights' emerge. The detailed description of each of these methods is outlined in the subsequent sections.

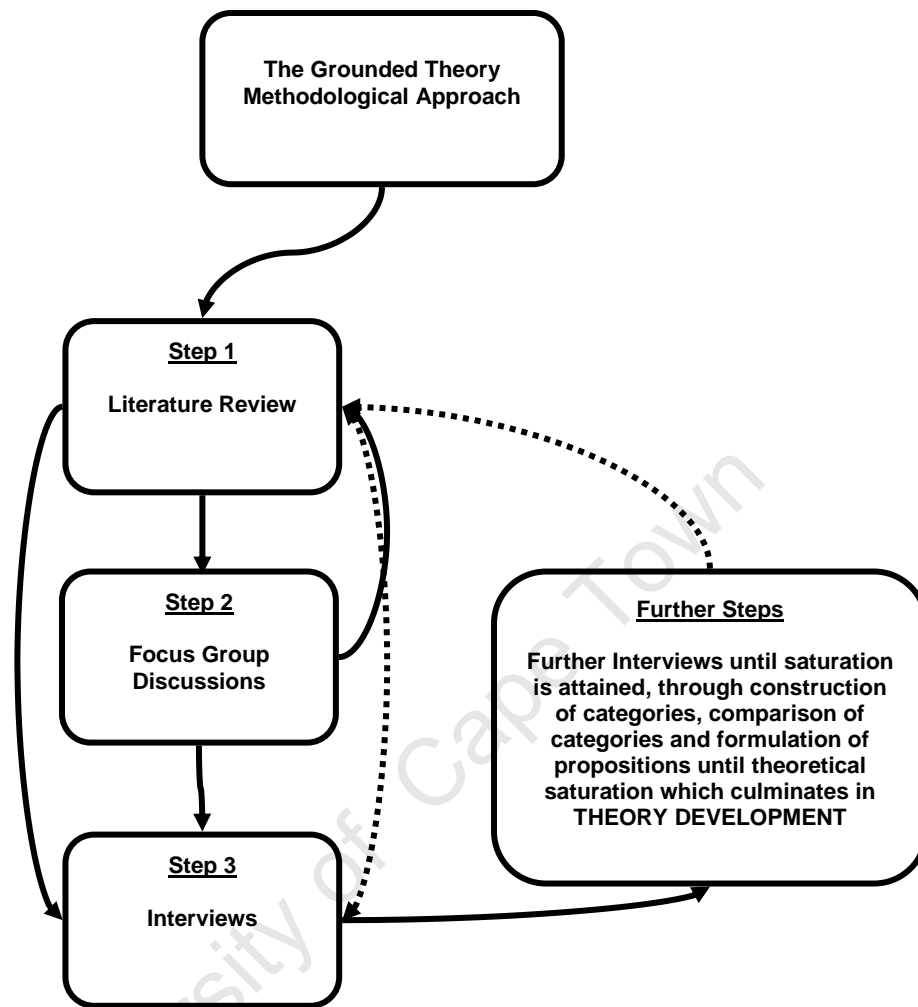


Figure 18: The methods employed in this study and their relationships (by the author)

3.14.1 Literature Review in the Grounded Theory Process

Literature review is described as a secondary analysis of available information already published in some form (Sarantakos, 2005). Prior theoretical knowledge is emphasised in the Straussian grounded theory approach as it augments the theoretical coding process which is the categorising of empirical data on the basis of previous theoretical knowledge (Kelle, 2007). Other factors that support the use of this technique in the grounded theory approach include (Strauss and Corbin, 2008; Charmaz, 2006; Kumar, 2011):

- it provides a theoretical background to the research process;

- it brings clarity to the research problem under investigation;
- it can be used as primary data;
- it can be a source for making comparisons;
- it can enhance sensitivity;
- it can provide a cache of descriptive data with very little interpretation;
- it can provide questions for initial observations and interviews and also to supplement them;
- it can be used to stimulate questions during analysis;
- it can suggest areas for theoretical sampling;
- it can help to integrate the research findings into the existing body of knowledge;
- it can be used to confirm findings and or the findings can be used to illustrate where the literature is incorrect, simplistic or only partially explains a phenomenon; and
- enable a researcher to make claims from the theory generated using grounded theory.

A detailed study and review of available literature was undertaken primarily to serve as an initial exploratory tool to gain an understanding of the phenomena under investigation and also to serve as a platform upon which existent gaps in informal settlement water service delivery in Zambia were identified. The development of the conceptual framework for this research process was largely augmented by this process.

3.14.2 Focus Group Discussions

The focus group method is *“a form of group interview in which there are several participants (in addition to the moderator/facilitator); there is an emphasis in the questioning on a particular fairly tightly defined topic; and the accent is upon interaction within the group and the joint construction of meaning”* (Bryman, 2004: p.346). It was introduced in 1936 by a German – American psychologist named Kurt Lewin who is today regarded as one of the modern pioneers to have studied group dynamics and organisational development. Cooper and Schindler

(2003) state that this approach is mostly applied in the consumer arena, where the main driving objective is to investigate how a new product or product concept will be received. Sarantakos (2005) notes that within the qualitative paradigm, focus groups offer access to the construction of meanings while participants interact with each other within the group and that this will occur when the participants first address, describe or explain issues according to their understanding as presented to them by the facilitator after which they compare, evaluate and finally present their different points of view whilst trying to achieve a possible consensus. In this study, the outputs from the members of the focus group discussions were transcribed.

The key features of this method include (Sarantakos, 2005; Bryman, 2004):

- emphasis is on a specific theme or topic that is explored in depth;
- the selection of people with a particular interest, expertise or position in the community;
- congregating the selected persons into one venue;
- introduction of the topic by the researcher and or facilitator who also acts as an arbitrator;
- the researcher guiding the discussion so as to address the research topic; and
- the researcher encouraging discussion amongst the members of the group where the researcher acts as a facilitating observer.

3.14.3 Sampling

Sampling is a procedure employed to extract samples for a study, whilst 'a sample' is defined as, part of the survey population that is to be studied. Sampling enables the researcher to study a relatively small part of the target population and yet obtain data that are representative of the whole (Sarantakos, 2005). The type of sampling design employed in this research is referred to as purposive or judgemental sampling. Saunders (2007: p.230) explains that, "*purposive or judgemental sampling enables you to use your judgement to select*

cases that will best enable you to answer your research question(s) and to meet your objectives". This form of sample is often used when working **with very small samples** such as in a case study research and also when the intention is to select cases that are particularly informative.

In this study, two peri urban areas (informal settlements) with differing characteristics both located in the Capital City of Zambia, Lusaka have been purposively selected. One area called Kanyama is located close to the central business district and several manufacturing industries and has a large working population, whilst the other, called Linda is located in the periphery area of the city, in close proximity to small farms consisting mostly of lowly paid (in comparison to Kanyama) farm workers. In comparative terms, these areas can be classified as 'urban' (i.e. Kanyama) and 'urban rural' (i.e. Linda) (see appendix 1 for more detailed information on their characteristics).

The respondents to be considered for the focus group discussion were selected as follows:

- 10 members from the Resident Development Committees (RDCs);²⁷
- 10 members from the community health committees;
- 10 members from the community water committees;
- 10 members from the community youth groups; and
- 10 women from randomly selected households.

The selection criteria

i) The views solicited from the members of the RDCs gave an overview on the problems and associated challenges faced by the members of the community being examined.

²⁷ The RDC is a community based organisation enacted through the Societies Act of the laws of Zambia charged with spearheading and coordinating all development related matters. The executive committees are democratically elected thereby giving them an unquestionable mandate over the community (Banda, 2006).

ii) The community health committees are generally sub-arms of the RDC whose prime focus is to oversee health prevention activities in close collaboration with the government health institutions located within the area. As water deficiency is blamed for the water borne disease outbreaks within the community, the health committee will give a unique dimension to the challenges brought about by inadequate water supply.

iii) Youths are active players in the development process of any community. They as partners in development and as residents of the target population in their own right provided information on aspects such as the impacts of scarce water on their education for example due to their spending long periods sourcing for their household's daily water requirements.

iv) The community water committees are another 'sub-arm' of the RDCs whose main role is to oversee activities associated with accessing of water in their communities. Their views gave an in-sight on the challenges faced by the community as a result of scarce or even non availability of potable water.

v) Women were interviewed separately due to their crucial role in sourcing of daily household water requirements. They availed information on the various problems households face as a result of this water access deficiency problem.

The discussions were facilitated by the researcher (whose main role was to guide and enhance open and frank discussion by all the participants) using pre-set questions as a principal guide on which each discussion was based, assisted by two research assistants who recorded the discussions.

Factors that may adversely affect focus group discussions

Sarantakos (2005) identifies several factors that may adversely impact focus groups as follows:

- domination of the discussion by some participants which may affect the direction and outcome of the discussion;
- some members may not participate in the discussion;

- being in a group may make some participants hide their real opinions, most especially in instances where the views can impact their personal lives or careers;
- group members may have reasons to offer a collective front and deceive the leaders; and
- the findings may not be representative.

Specific attention was rendered by the researcher to prevent the occurrence of these factors during the focus group discussions.

3.14.4 Semi Structured Interviews

Interviews are defined as the “*elicitation of research data through the questioning of respondents*” (Bloor and Wood 2006: p.104). In the qualitative paradigm, Easterby-Smith et al. (2002) assert that interviews are regarded as the most fundamental of all qualitative methods which provide an opportunity for the researcher to; probe deeply to uncover new clues; open up new dimensions of a problem and to secure vivid, accurate inclusive accounts that are based on personal experience. Additionally, interviews enable the researcher to enquire in relative detail information related to any of the following aspects (Leedy and Ormrod, 2001: p.159):

- facts (e.g. biographical information);
- people’s beliefs about the facts;
- feelings;
- motives;
- present and past behaviours;
- standards for behaviour (i.e. what people think should be done in certain situations); and
- conscious reasons for actions or feelings (e.g. why people think that engaging in a particular behaviour is desirable or undesirable).

Several differences exist between interviews conducted within the qualitative research paradigm and those that are based on the standards and principles of quantitative research. Table 12 summarises these differences:

Table 12: Comparison of quantitative and qualitative interviews

Criteria	Quantitative Interview	Qualitative Interview
Nature of questions	Mostly structured	Mostly open (unstructured)/semi structured
Stance	Semi-formal	More informal
Order of questions	Prescriptive	Not binding
Interviewing assumes	The primacy of the interviewer	The primacy of the respondent
Interviews are controlled	By the interviewer	By no one
Interviews usually are	Distant from the subject; uninvolved, objective and ethical	Close to the subject; engaged, subjective and ethical
Probing/prompting	Controlled	Not controlled
Duration of interviews	Relatively brief	Relatively long
Details of interviewing	Are set at the outset	Are guided by the situation
Interviewees per study	Usually many	Usually few
Overall structure	Rigid	Flexible
Presentation of questions	Uniform across respondents	As required; flexible
Number of interviewers	Usually many	Usually one
Nature of interviewing	Question-answer	Discussion
Sample	Random; constructed before the study, and cannot be changed	Not random; flexible; expanded during the study

Source: Sarantakos (2005) and Bloor and Wood (2006)

The interview research technique therefore provides an opportunity to (Easterby-Smith et al., 2002):

- i) develop an understanding of the problem of water supply provision to informal settlements of Zambia from a respondent's view; and
- ii) understand the constructs that the interviewee uses as a basis for his/her opinions and beliefs about the issue of water supply to informal settlements of Zambia

Even though there is general unanimity that qualitative interviews assume a semi-structured to unstructured format, it is essential that an interview guide which principally serves as a 'memory prompt to ensure that all the areas that

require probing' are covered during the interview (Figure 19 outlines the series of steps necessary for formulating questions for an interview guide).

Advantages and Limitations of the Interview

The inherent advantages and limitations of the interview are listed below (Leedy and Ormrod, 2001; Goulding, 2002; Sarantakos 2005; Kumar 2011).

Advantages:

- Interviews can be adjusted to meet many diverse situations e.g. when probing very complex and sensitive situations the interviewer can prepare the respondent before asking sensitive questions and also to explain any complex questions to the respondents(s) in person;
- Their flexibility can lead into areas which may not have been considered prior to the interview but which may be potentially relevant to the study;
- They have the potential to generate rich and detailed accounts of the respondent's experience;
- Interviews enable the investigator to obtain in-depth information through probing as time may not necessarily be a limiting factor;
- Interviews have a wider application i.e. they can be used with almost any type of population: children, illiterate or very old persons; and
- Interviews enable the investigator to record spontaneous answers.

Limitations:

- Interviewing can be time consuming and expensive;
- The quality of data depends upon the quality of interaction between the interviewer and the interviewee;
- The interviewees when asked about past events and behaviours are reliant on their memories, and human memory does contain inaccuracies to some measure;
- Interviews offer less anonymity than other methods since the interviewer knows the personal details of the respondent such as identity, residence, type of housing, family size etc. of the respondent; and

- The researcher may bring to the fore his or her bias during the framing of questions and interpretation of responses.

Figure 20 illustrates the various steps required in order to formulate an interview guide.

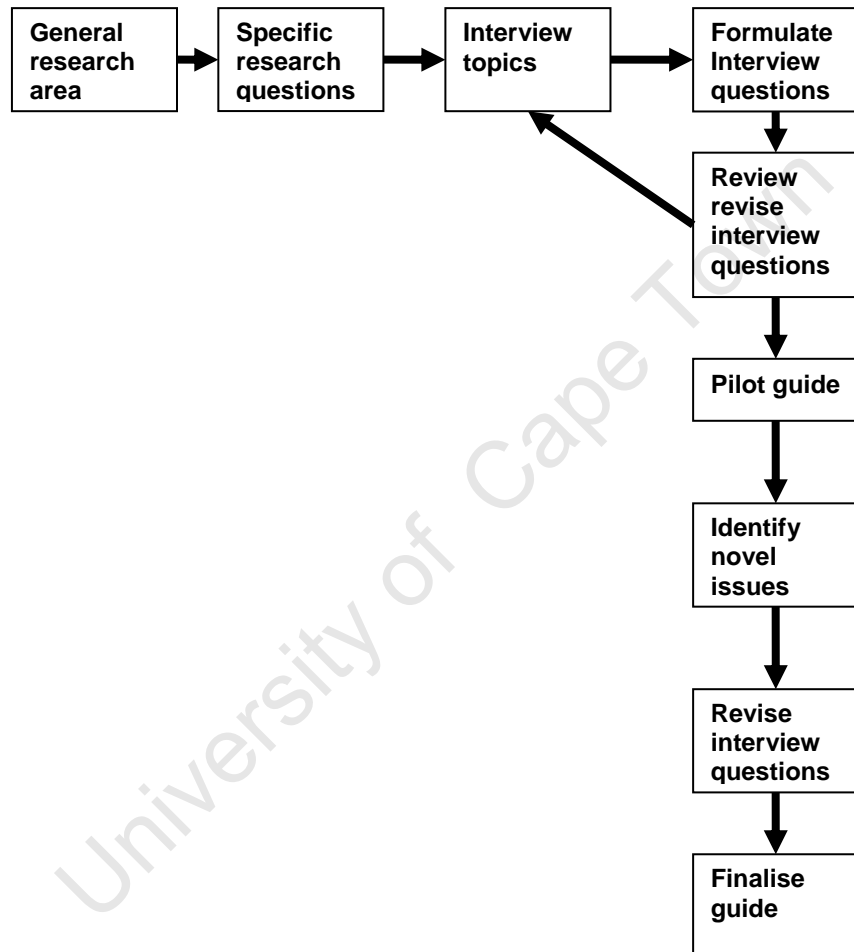


Figure 19: Formulating questions for an interview guide (Bryman, 2004)

In this study, two different interview guides were used since the informants were clustered into two main groups namely:

- those directly involved in service provision i.e. those employed by commercial utilities; and

- those who are not directly involved but have some role in service provision e.g. regulators, policy formulators, financiers etc.

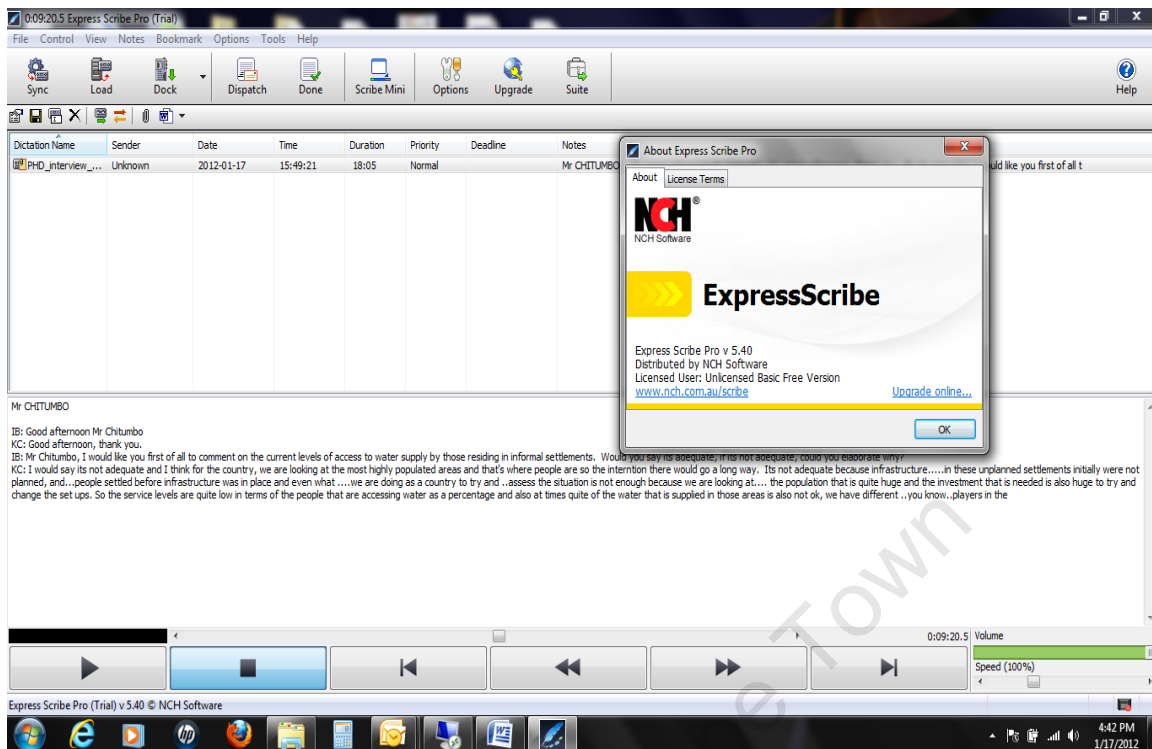
The outputs from both sets of interviews aided the overall analysis process in the research.

3.14.5 Interview Transcription

Transcription is a technical typing procedure for representing spoken discourse in text which is undertaken between the research stages of data collection and analysis (Bloor and Wood, 2006). The interviews were recorded using a digital audio recorder.

The transcription process was as follows:

- i) Express Scribe a professional audio player software designed to assist the transcription of audio recordings having features used to aid and enhance audio quality and clarity and a control audio playback function was pre-loaded on to the computer (<http://www.nch.com.au/scribe/index.html>, viewed on line October 20th, 2011);
- ii) The recorder had an 'in-built' feature that enabled the transformation of the recordings into MP3 file format after the stop button was engaged at the end of each interview; and
- iii) The recorded file was then copied from the audio recorder on to the computer and saved as a 'Word' file which was named.



Express scribe software was then started and the “Load” button under the toolbar pressed to load the recorded MP3 file to start the transcription process. The recordings were listened to via headphones for enhanced clarity. Where the clarity of the audio was poor the software had a provision for speed control.

3.14.6 Ethical Issues and Anonymity

All the participants were informed about the research process and its key objectives and a voluntary consent or no-objection was obtained prior to their participation. Pseudonyms were ascribed to each participant so as to conceal their identity.

3.14.7 Case Studies

Case studies are generally defined as a research strategy that focuses intensely on a particular individual, programme, organisation or event over a defined time period, the chief rationale being its inherent unique or exceptional qualities that can promote or advance the understanding of a particular phenomenon (Leedy

and Ormrod, 2001; Yin, 2003). In this study, it has been outlined that there is need for a better understanding as to the effectiveness of the existent institutional models for water supply provision to informal settlements in Zambia. Two informal settlements located in the City of Lusaka namely Kanyama and Linda Zambia were purposively selected for the focus group discussions. These areas despite both possessing the attributes that class them as informal settlements have several differences as outlined in Table 13 below.

Table 13: Kanyama and Linda profiles

	Kanyama	Linda
Population	198,696	18,868
No of Plots	2,554	10,791
Proximity to City Centre	2km	9km
Employment Status	Mainly Industrial and Commercial sector due it's very close proximity to the city centre	Mainly farm hands as it is located within a commercial farming area

Both Yin (2003) and Leedy and Ormrod (2001) are in agreement that one of the key rationales behind the adoption of the 'multiple case' approach as opposed to a 'single case' approach mainly stems from the fact that evidence from multiple cases is often considered more compelling and thus makes the overall study more robust and also because they 'expand' the external generalisability of the findings of the study (the process followed in this study is illustrated in Figure 20 below).

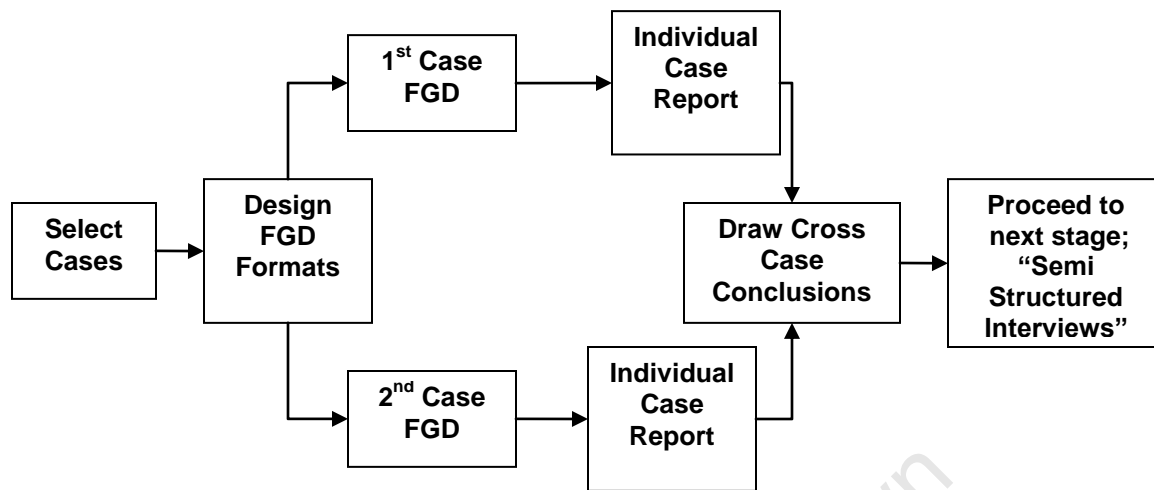


Figure 20: The "Multiple Case Study Approach" adapted from Yin (2009)

Detailed descriptions of the selected informal settlements namely **Linda Area** and **Kanyama Area** have been given in appendix one. The focus group discussions ought therefore to provide specific insights or some extra contribution to what is already known on water service provision to informal settlements in Zambia from the following perspectives (Leedy and Ormrod, 2001):

- any similarities and or dissimilarities with other previously reported cases;
- confirmation or disconfirmation of an existing hypothesis or theory; and
- any probable new interventions that may increase say efficiency and or overall effectiveness.

The findings resulting from the two selected cases provided the basis for the development and refinement of the interview guides used for the next stage of data collection; *the interviews* (Ref Figures 15 and 16) which are in accordance with the grounded theory methodological framework as applied in this study.

3.15 Coding in Grounded Theory

The data collected from both the semi-structured and focus group discussions needs to be broken down into distinct units of meaning which are *labelled* to

general concepts²⁸ a process referred to as *coding*. Put simply, coding refers to the categorising of segments of data with '*short names*' that simultaneously summarise and account for each piece of data (Charmaz, 2006; Goulding, 2002). Through coding, concepts are initially clustered into descriptive categories²⁹ after which they are re-evaluated for any interrelationships and through a series of further analytical steps are gradually subsumed into higher order categories, or one underlying core category which suggests an emergent theory (Goulding, 2002: p.74-75). Coding is hence a pivotal link or core process between collecting data and developing an emergent theory to explain these data (Charmaz 2006; Holton 2007). The coding paradigm adopted and utilised in this study is in conformity with the 'Straussian approach to Grounded Theory' whose coding procedure mainly revolves around 'one category at a time' i.e. the category forms the 'axis' around which further coding and category building can be done which may eventually become the core category. The types of coding utilised in this study are the open (initial) coding and the axial coding processes.

3.15.1 The Open Coding Process

Goulding (2002: p.77) describes this process as '*the initial stage of constant comparison during which data are scrutinised for every possible meaning*'. The key issues and questions considered during this step of coding include (Charmaz, 2006: p.47):

- What is this data a study of?
- What does the data suggest?
- What does the data pronounce?
- From whose point of view?
- What theoretical category does this specific datum indicate?

²⁸ A **concept** is basically the underlying meaning, uniformity and or pattern within a set of descriptive incidents (Goulding 2002: p.77)

²⁹ A **category** is a higher order concept having a much wider explanatory power. It pulls together all the identified concepts into a theoretical framework (Goulding 2002: p.77)

Charmaz (2006) further explains that the initial coding process enables the researcher to remain open to exploring whatever theoretical possibilities that can be or are discernible from the data.

The analysis of the data during the open coding process begins with the **writing of memos** which are notes (or written records of analysis), written immediately after the data has been collected that describe the scene, events and or behaviours under study (Goulding, 2002). Conceptual labelling is effected after the data is broken down into distinct units of meaning using techniques such as '**line by line analysis**', where every line of a transcribed interview is searched for key words or phrases that give some insight into the phenomenon under investigation (Goulding, 2002). The open coding process is illustrated in Figure 21 below.

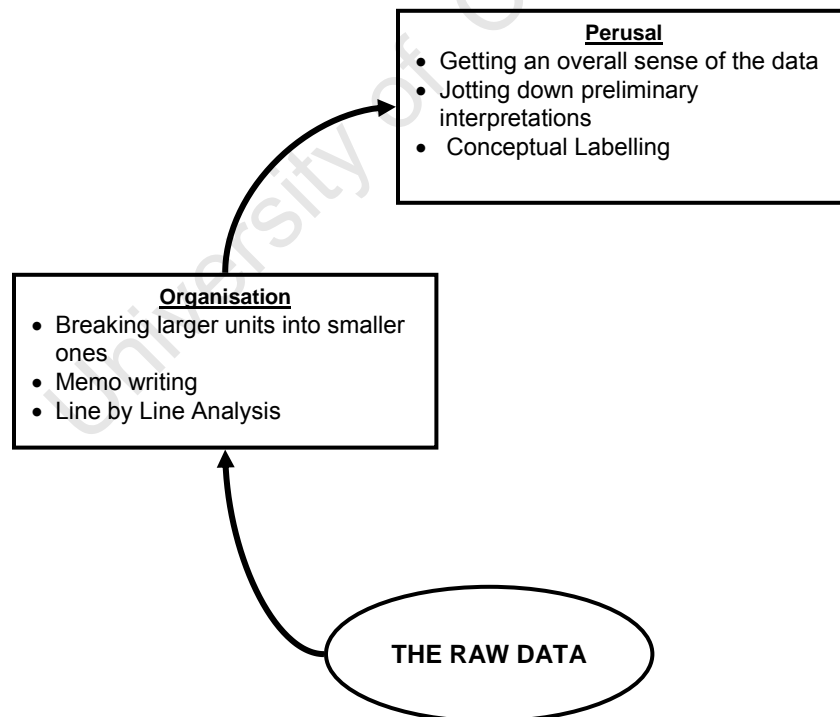


Figure 21: The Open Coding Process adapted from "The Data Analysis Spiral" by Leedy and Ormrod (2001)

Goulding (2002) states that, the analysis should after the 'open coding process' move to a more 'abstract' level which focuses on theory development rather than general descriptions. This process is referred to as 'axial coding'.

3.15.2 The Axial Coding Process

Goulding (2002: p.78) describes this process as the '*appreciation of concepts in terms of their dynamic interrelationships, which should ultimately form the basis for the construction of the theory*'. The key objective of axial coding is to sort, synthesize and organise large amounts of data and reassemble them in new ways after open coding. Axial coding relates categories to subcategories, specifies the properties and dimensions of a category and reassembles the data that was fractured during initial coding to give coherence to the emerging analysis or form the basis for the construction or development of theory (Charmaz, 2006; Goulding 2002). The four main steps in the axial coding process are illustrated in Figure 22.

3.16 Core Categories and Theory Development

The various emergent categories still require 'rigorous refinement' through constant comparison which indicates whether there is still need to collect more data in the field. If there is still a need then the data collection strategy at this stage is specifically focused at the emergent category and its properties through a process referred to as ***theoretical sampling***³⁰ (Charmaz, 2006). The data collection exercise ceases when no new properties or dimensions emerge a stage referred to as theoretical saturation (Holton, 2007).

³⁰ Theoretical sampling refers to the seeking of pertinent data to develop the emerging theory. The main purpose of theoretical sampling is to elaborate and refine the categories that constitute the theory. It is conducted by sampling to develop the properties of the category(ies) until no new properties emerge (Charmaz 2006: p.96).

The process of coding and abstraction of data finally lead into the development of a higher order or core³¹ category which with justification forms the basis of the emergent theory. The core category pulls together or integrates all the various strands to offer an explanation for the phenomenon under investigation (Goulding, 2002). Glaser and Strauss (1967: p.190) summarise this action stating that, *'when the discovery and generation of theory is the goal of a survey analysis, "crude" or "general duty" indices suffice to indicate the concepts of the theory and to establish general relationships between them, which in turn become the basis for suggesting hypotheses for the emerging theory'*.

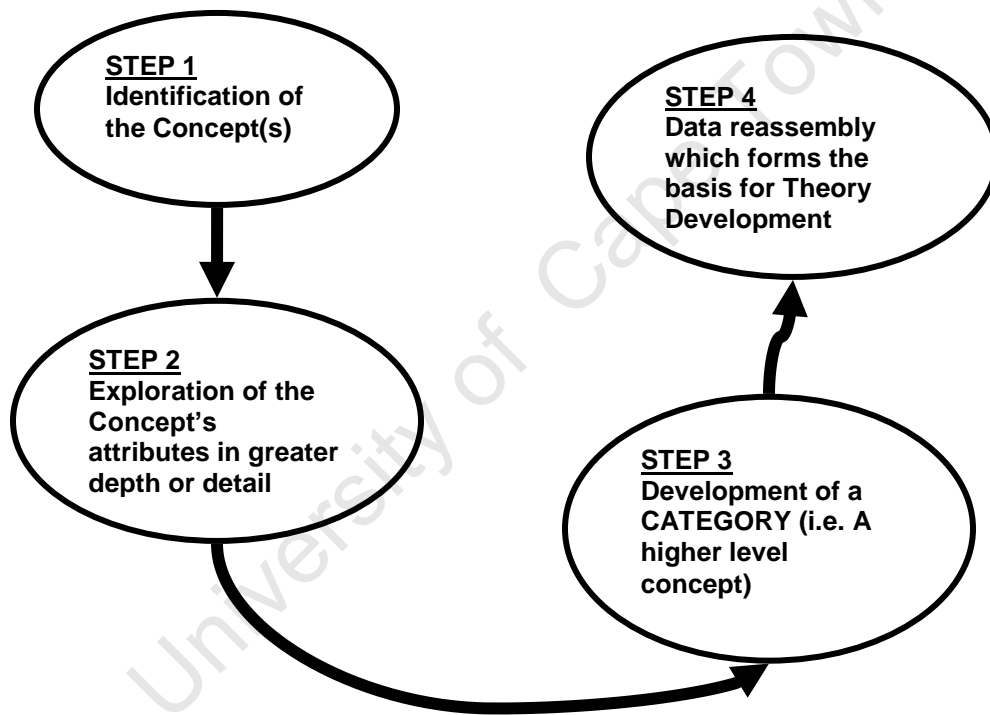


Figure 22: The Axial Coding Process (by the author)

³¹ A core variable can be any kind of theoretical code: a process, a typology, a continuum, a range, dimensions, conditions and consequences (Holton 2007: p.279)

3.17 Summary

The main thrust of this chapter was initially to identify the philosophical leanings of this research process which has a direct bearing or influence on the selection criteria of the most appropriate methodological approach that ought to be employed. Secondly, the chapter has described in moderate detail the key methodological approach employed in this study, namely the 'Grounded Theory Methodological Approach' as developed by Barney Glaser and Anselm Strauss. It also explains the points of departure between the two developers of this methodology and why the Straussian version was preferred in favour of the Glaserian version. It has been established too that an understanding of one's ontological and epistemological orientation helps to clarify and select the most appropriate inquiry strategy that can be employed in a research process.

The articulation of the philosophical orientation resulted in the classification of this research as predominantly constructionist whose strategies of inquiry are drawn from the qualitative research paradigm. The exercise to 'classify the research' no doubt served as an imperative preamble for the research design process whose principal output comprise a thorough outlay of the procedures to be followed during data collection, the type of data to be collected and the data analysis techniques. In addition, the various methods employed in the research were also been explained namely; Literature Review; Focus Group Discussions and Semi Structured Interviews and the rationale behind their selection. The next chapter is concerned with the data collected, presentation and its preliminary interpretation.

CHAPTER FOUR: DATA PRESENTATION

4.1 Introduction

This chapter presents the field data collected from the focus group discussions and interviews with purposively selected key informants and also the insights gathered from the literature review necessitated by the questions that arose after the focus group discussions. The open and axial coding processes were used to conceptualise the data initially through fragmentation in order to allow for the emergence of core categories from which the various phenomenon are identified. The data presentation begins with the various existent organisational models (or service delivery mechanisms) that are currently employed in the two selected study areas as illustrated on Figures 23, 24 and 25 and explained on Tables 14, 15 and 16 respectively. Examination of these models coupled with literature already reviewed served as the base of the emergent themes and concepts. This was followed by the focus group discussions held in the two areas amongst respondents grouped using the criteria explained in detail in section 3.14.3. The outputs from the group discussions enabled the development of the core emergent categories as explained in Table 25. The emergent categories and concepts formed the main body of the in-depth semi-structured interviews with purposively selected informants.

4.2 The Existent Service Delivery Mechanisms

The findings key presented herein refer only to responses obtained from the various social sub-groups found in both peri-urban areas which are described in detail in appendix 1. Water service provision in Kanyama area is provided by the mandated public provider in some sections (Figure 23 and Table 14) and a Community Water Trust in some sections (Figure 24 and Table 15) whilst service provision in Linda is provided by a privately owned and managed “Business Enterprise” or Community Based Operator (Figure 26 and Table 16). These models are discussed in more depth below.

4.2.1 The Commercial Utility Direct Model

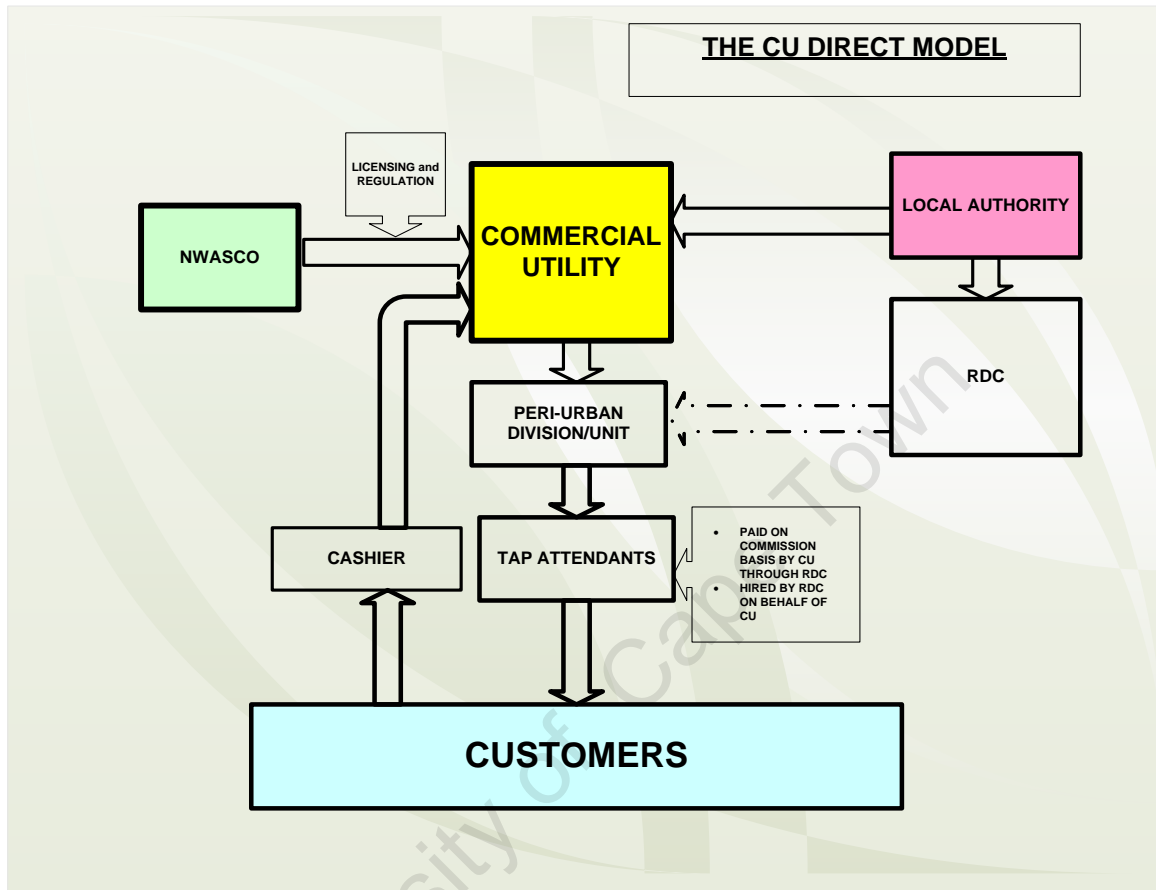


Figure 23: The Public Utility Water Service Provision arrangement in Kanyama (Source: Banda, 2006)

Table 14: Key operational attributes for the model shown in Figure 23

Issue	Comments
Formation	Formed by the Public Utility (or Commercial Utility) in liaison with the Residents Development Committee (RDC)
Legal Standing	CU provides service directly in accordance with the WSS Act
Regulator	CU is licensed by the Regulator (NWASCO).
Relationships	CU has direct relationship with the Local Authority from whom it has acquired the mandate to provide services. CU liaises with RDC on the hiring and payments to the Tap Attendants who are members of the community

The key emergent issues with this model are:

- there being a weak relationship between the Commercial Utility (CU) and the community through the Resident's Development Committee (RDC³²). The RDC mainly facilitates the employment of the tap attendants from the community. It plays no role in the direct management of the service thus the level of "community ownership or involvement" is insignificant which negates the overall effectiveness of the model; and
- the utility is not incentivised to enhance the levels of service as the revenue collection process is cumbersome in the poorly developed informal settlement coupled with low returns. The utility provides the service only because of the legal mandate it possesses and for political expediency.

³² In Zambia the CBO that is charged by the community to oversee developmental matters is called the Residents' Development Committee (RDC) or Ward Development Committee (WDC). The RDC or WDC are democratically voted into office by the community through elections conducted within the community.

4.2.2 The Water Trust Model

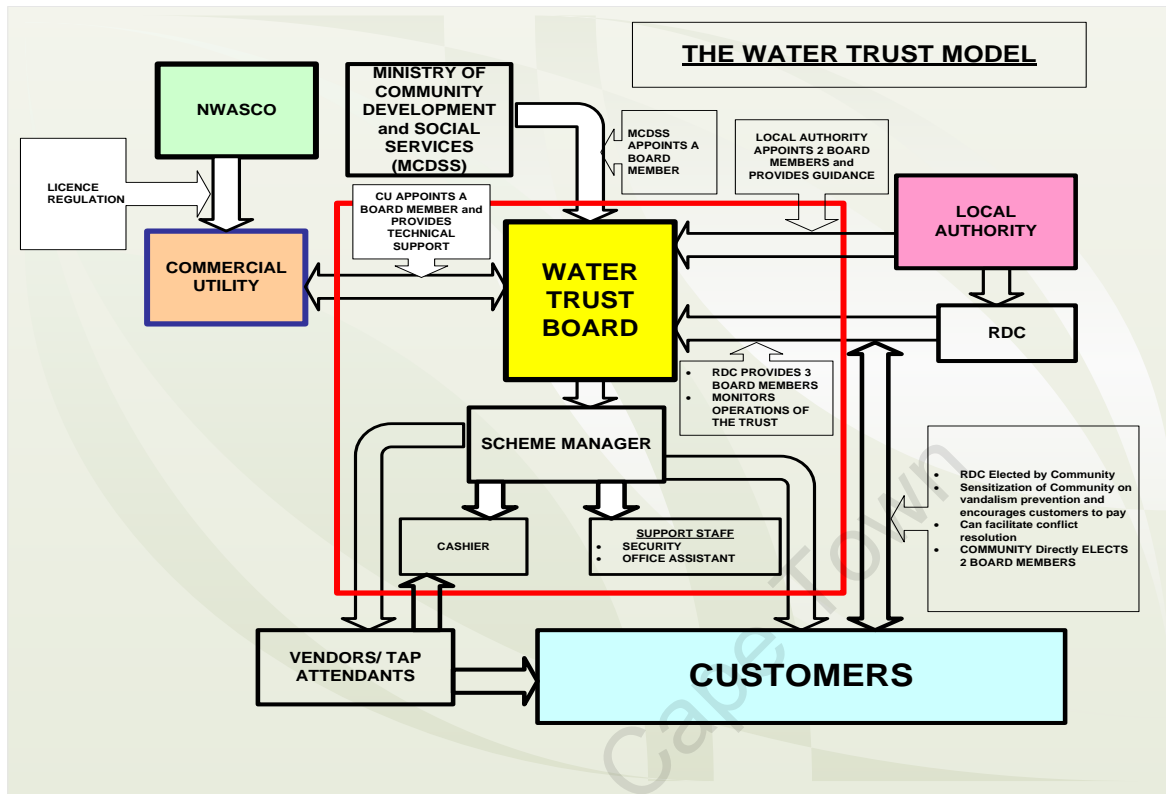


Figure 24: Community Trust Water Service Provision in Kanyama Area (Source: Banda, 2006)

Table 15: Key operational attributes for the model shown in Figure 24

Issue	Comments
Formation	Formed by the Community in collaboration with the LA supported by an NGO or donor agency. This particular model's formation was facilitated by CARE International.
Legal Standing	Draws its legal standing from the Land Perpetual Succession Act to operate as a Trust. There is need to regularise its operations to conform to the WSS Act part (iv) section 11(1) which stipulates that a service provider can only operate under authority of a licence issued under the WSS Act.
Regulator	Not licensed as a service provider.
Relationships	Both the CU and LA have a linkage to the Water Trust as they each have representation on the Trust Board. They both provide technical support to the Trust Management Team.

The key emergent issues with this model are:

- the association between the various participating key stakeholders are as merely as members of the Trust Board. The management of the 'Trust' despite being largely community driven, operate on a social platform and

- not based on a strict business ethos. This impacts on their level of effort as generation of profit will not be their prime concern; and
- the local authority role is mainly to assure the social concerns and does not extend to realigning the development patterns in the informal settlement so as to make them more amiable to public water service delivery which demand regular and orderly arrays.

4.2.3 The Business Enterprise Model

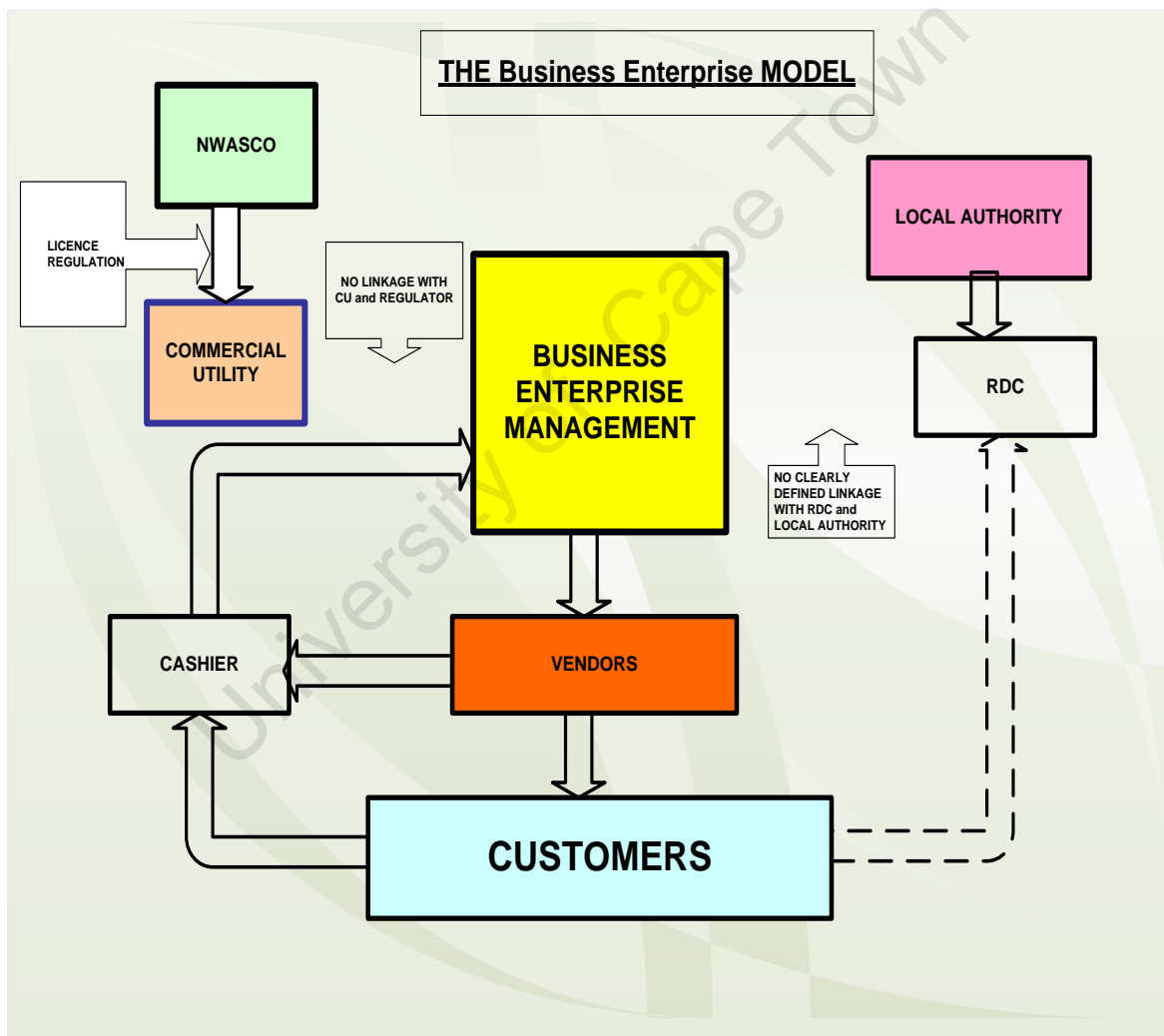


Figure 25: The Community Business Enterprise Model in Linda Area (Source: Banda, 2006)

Table 16: Key operational attributes for the model shown in Figure 25

Issue	Comments
Formation	Formed by some members of the Community who have access to resources needed to construct and equip a small community water supply scheme (the public provider has no presence in the area).
Legal Standing	Registered under the Business Names Act. There is need to regularise its operations to conform with the WSS Act part (iv) section 11(1) which stipulates that a service provider can only operate under authority of a licence issued under the WSS Act.
Regulator	Not licensed as a service provider.
Relationships	Both the CU and LA have no linkage to the Enterprise. It has a very weak link with the RDC.

The key emergent issues with this model are:

- it has a no real linkage with the community (which is represented by the RDC) which threatens it's sustainability;
- no linkage with the mandated service provider hence not in conformity with the law;
- no linkage with the regulatory authority;
- exists because there is no alternative; and
- operates on business principles.

4.3 The Focus Group Discussions

The responses from the focus group discussions have been grouped under three main themes as follows (refer also to section 2.8.3):

- The existing water supply situation;
- Their perception on the envisaged risk levels if the private sector were to enter the service delivery arena; and
- Whether private sector participation would provide the solution to the current service delivery deficiency.³³

³³ The rationale behind the solicitation of their views on the viability and applicability of the private sector in service provision stems from the fact that the legal and institutional framework for urban provision of public water supplies in Zambia allows for the participation of the private sector through a partnership arrangement with the mandated provider i.e. the commercial utility, however to date no commercial utility has adopted this approach.

The participants in the focus group discussions were drawn from existing community based organisations namely the Resident's Development Committee (RDC), the Water Committee, the Youth Committee, the Women Committee and the Health Committee (refer to section 3.14.3). The meetings took place at the community centre and each lasted approximately 60 minutes. As the discussion was amongst members of the community explaining their experiences in a group, reliability was assured as a general consensus was attained through the verbal exchanges (interactions) of the respondents on all the issues presented to them. Assisting in this process were 2 experts in sociological enquiry techniques.

It is worth noting at this juncture that the themes that the focus group discussions were based on, emanated from the Straussian view of grounded theory that encourages the researcher to acquire a level of familiarity with the area of inquiry prior to commencement of the research and that pre-conceptions are inevitable (Kelle, 2007; Easterby-Smith et al., 2002). The literature review in this case acted as an initial informant on the specific arenas that are generally regarded as problematic during informal area water supply in Zambia.

4.3.1 Focus Group Discussion Outputs for Kanyama and Linda Peri Urban Areas

Table 17: Theme - Existing water supply situation Kanyama FGD

	RDC	Water Committee	Women	Health	Youth
Problem Severity	Extreme , supply is inadequate	Moderate as supply is adequate	Extreme; some days pass without any supply	Extreme. High incidence of water borne diseases. People walk long distances	Severe as 50% of area has inadequate supply
Level of corrective action by authorities	Very Poor especially in unserved areas regarded as illegal	Efforts are there except that mobilisation of capital remains a challenge	Nothing is being done	Reactive to disease outbreaks but very poor	Nothing tangible at the moment

	RDC	Water Committee	Women	Health	Youth
Current Provider(s)	Community Trust (CT) ³⁴ and Public Utility (PU)	Community Trust (CT) and Public Utility (PU)	Community Trust (CT) and Public Utility (PU)	Community Trust (CT) and Public Utility (PU)	Community Trust (CT) and Public Utility (PU)
Effectiveness of Provider(s)	CT is effective but needs capital; PU not effective since they did not involve community	Very effective but need to extend to the extreme areas	Not efficient and inadequate as supply is only for a few hours per day	Effective in serviced areas only. Little being done to extend service to unserved areas	Both not that effective due to inadequate infrastructure and power failures
Strengths Weaknesses of Providers	CT easy to access and employs local persons. PU staff start work late, not committed	Adequate water supply, partnership with the RDC but susceptibility to political interference	They do not respond to complaints in time and short hours of supply	Slow response to reported defects but there is some appreciable improvement in maintenance as compared to olden days	Uneven distribution of the network, poor maintenance. Fair tariff and good water quality
Ever heard of the PPP concept	Yes	Yes; the City of Lusaka Solid Waste Collection is an example	No	Partially Yes	Yes
Would PPP augment service levels?	Yes as it will supplement efforts also it should involve community	Yes especially in areas where there are no CTs.	Yes if community is sensitised during the implementation process	Yes it will supplement existing efforts and may address unserved areas. Will also aid employment creation	Yes since it will supplement existing efforts and enhance efficiency

Key issues (Table 17):

The water supply situation in this area is extremely inadequate and there is currently little or no effort by the mandated provider (the commercial utility) to resolve the problem. There is a Community Based Trust providing the service in

³⁴ Refers to a 'Community Based entity' formed by the community to augment social service delivery such as water supply. It is generally non-profit making and managed generally on voluntary lines

a segment of the informal settlement but lack the requisite resources to effectively provide the required level of service. There was general agreement that a private operator in partnership with the community would enhance service delivery to the area.

Table 18: Theme-Risks of PPPs Kanyama FGD

	RDC	Water Committee	Women	Health	Youth
Any concern on profit motive of the private sector	No, as long as the whole process is done transparently with community involvement. People desperate for an efficient , reliable service	Yes since they are likely to charge higher tariffs than CTs and there may be no community involvement	No since supply would improve and be more reliable	No concern so long as Community is sensitised on key issues such as tariffs and the mode of operations	No
How can PPPs be accepted by communities	Community sensitisation and concept should not be imposed	Community involvement throughout	Community sensitisation	Community sensitisation will enhance sense of ownership	They will bring efficiency which is desperately needed
Adequacy of PU infrastructure to support PPP	Inadequate	Inadequate	Severely inadequate	Severely inadequate	Severely inadequate
Other risks	Vandalism Lack of ownership Political interference Using staff not from the community Private operator must operate independently	PPPs will not be sustainable since community sensitisation is very complex; vandalism will be problem too	Vandalism	Fear of high tariffs and vandalism	Vandalism

Key issues (Table 18):

The community do not mind if service is to be provided by a private operator who has profit as the sole motive so long as the quality of service is improved. There would be need for sensitisation of the beneficiary community prior to engagement of a private operator as this service delivery mechanism will be new. The

infrastructure would also need rehabilitation and expansion which points to the need for capital.

Table 19: Theme- PPPs as an Alternative Solution Kanyama FGD

	RDC	Water Committee	Women	Health	Youth
Areas which PPPs should focus on if adopted	Public access points e.g. Kiosks and Individual connections	No since proposition is not supported	Public access points first (kiosks) and then individual connections	Increase public access points before individual connections. Need more infrastructure such as reservoirs	Increase access levels at household level
Critical considerations when entering into a PPP	Transaction must be transparent devoid of hidden clauses. It must also be easy to understand	N/A	Community involvement and sensitisation throughout the transaction preparation process	Sensitisation of the community and also use local residents as far as possible in the operation	Community must be involved in process from the start. Workforce should emanate from the community
General Comment	Strong confidence in ability of the private sector to improve services	Strengthen the operations of the community trust through upgrading the infrastructure	There must be a strong level of partnership with the community	Strengthen the operations of the community water trust in the interim	None

Key issues (Table 19):

The private operator will be required by the community to expand coverage which is currently very low. There is no objection to a private operator providing the services and there is a high level of confidence that service levels will improve so long as the operator is procured in a transparent manner and should operate in partnership with the community.

Table 20: Theme-Existing water supply situation Linda FGD

	RDC	Water Committee	Women	Health	Youth
Problem Severity	Very severe as access is currently only for 35% of the population	Extreme , supply is inadequate, there has even been a cholera outbreak in 2001	Extreme; supply is very erratic	Very critical coverage about 40%	Severe and erratic
Level of corrective action by authorities	Nothing tangible	None at the moment	Nothing is being done	None at all	Nothing tangible
Current Provider(s)	Community Based Operator (CBO)	Community Based Operator (CBO)	Community Based Operator (CBO)	Community Based Operator (CBO)	Community Based Operator (CBO)
Effectiveness of Provider(s)	Not effective	Not effective	Not effective	Not effective	Not effective
Strengths Weaknesses of Providers	Inadequate capacity to service the entire area; manpower shortages; no involvement of community in tariff setting	Supplies individual connections; Opposition from the community;	Installed many individual connections; tariff high	Supply to a few households; generally supply is erratic, unskilled manpower; poorly remunerated staff	Poor time keeping, short hours of operation
Ever heard of PPP concept	Partly	No	No	No	Yes
Would PPP augment service levels?	Yes. Agreement must have clauses to ensure that the private operator commits resources to the operation	Yes as it will enhance efficiency and ownership from community would be realised	Yes as it will enhance operational efficiency	Yes it will bring efficiency	Yes since may enhance efficiency

Key issues (Table 20):

The water supply situation in this area is extremely inadequate and coverage is very low. There is currently little or no effort by the mandated provider (the commercial utility) to resolve the problem. There is a Community Based Private Operator (Ref Figure 25) who is operating without any partnership arrangement with the mandated provider or community. The level of service is highly

ineffective. Community would rather the operator enters into a partnership with them for service provision to improve.

Table 21: Theme-Risks of PPPs Linda FGD

	RDC	Water Committee	Women	Health	Youth
Any concern on profit motive of the private sector	Yes; The contract must ensure the private sector does not withdraw financial resources in the short term	No as efficiency would be realised, sustainability would be attained so long as the community is involved	No concern as long as service standards are improved	No	No Efficiency will be realised; employment will be generated
How can PPPs be accepted by communities	Community sensitisation	Community involvement throughout, the concept should not be imposed	Community sensitisation	Community sensitisation will enhance sense of ownership; Improved efficiency will enhance acceptability	Community participation and sensitisation
Adequacy of PU infrastructure to support PPP	Inadequate	Inadequate	Severely inadequate	Severely inadequate	Inadequate
Other risks	Vandalism due to Lack of ownership, hence sensitisation is critical for success	Low income levels; political interference; unwillingness to pay, general resistance	Vandalism	Vandalism due to lack of ownership; poor service at the expense of profit generation	Apportionment of profits; Transparency will avert conflict

Key issues (Table 21):

A high level of confidence amongst the community for services to be provided by a private operator even if profit generation is the prime motive as they believe that operational efficiency will be substantially enhanced. Community sensitisation will have to be effected to assure community ownership and acceptance of a private operator.

Table 22: Theme-PPPs as an alternative solution Linda FGD

	RDC	Water Committee	Women	Health	Youth
Areas which PPPs should focus on if adopted	Focus on increasing Public access points i.e. Kiosks	Focus on increasing Public access points i.e. Kiosks	Public access points first (kiosks) and then individual connections	Increase public access points before individual connections. Need more infrastructure such as reservoirs; better quality materials for the infrastructure	Increase access levels public access points and at individual households
Critical considerations when entering into a PPP	Transaction must be transparent devoid of hidden clauses. It must also be easy to understand	Training and sensitisation; Expansion of infrastructure	Special consideration for the plight of the poor and vulnerable	Community involvement and transparency	Community must be involved in process to prevent vandalism
General Comment	Capacity building of local entrepreneurs to enable them provide the services	Consider mobile vending	Community participation is essential for success	The existing CBOs are not serving effectively; they are not regulated	Increase of supply capacity necessary

Key issues (Table 22):

The water supply situation in this area is extremely inadequate and a would-be private operator will need to initially focus on service coverage extension. The procurement process for a private operator will need to be done transparently. The operator would be required to enter into a partnership arrangement with the community.

4.3.2 Coding and Category Development from the FGDs conducted in Kanyama and Linda Areas

The outputs from the focus group discussions for the Kanyama and Linda peri-urban areas were subjected to open-coding primarily to extract the various possible meanings and explanations under the identified themes.

Table 23: Open Coding Analysis for Kanyama Peri-Urban Area

Issue	Conceptual Label	Key Question(s)
Access to water supplies	Supply is inadequate and unreliable	<ul style="list-style-type: none"> Is the provider simply unreliable or is the mode of provision not viable?
Efforts to redress inadequacy of supply	Little or no effort is applied	<ul style="list-style-type: none"> Is it due to inadequate capital resources? Are peri-urban areas not commercially viable for service providers?
Quality of water supplied	Quality very good	<ul style="list-style-type: none"> Community is happy with water quality from the public providers. Can this discourage community accessing water from say shallow hand dug wells?
Role of the Community	Community should participate in some form and should be sensitised	<ul style="list-style-type: none"> Should the Community play an active role, if so to what level?
Community's experience where there is a partnership role for the community with the service provider	Better access by community members to the service provider, better levels of communication	<ul style="list-style-type: none"> Should the Community play an active role, if so to what level?
Maintenance of the network infrastructure	Inadequate maintenance	<ul style="list-style-type: none"> Why is there inadequate network maintenance by the providers?
Response to customer complaints	Non responsive or very poor	<ul style="list-style-type: none"> Why is the response to customer complaints very poor?
Existing tariff structure accepted by community	Regulatory framework adequate	<ul style="list-style-type: none"> Is it likely that the existent tariff regime (set by the regulator) is unattractive for the service providers?
View by community on the PPP concept for public service delivery	Have some basic knowledge of the concept and believe it can augment service delivery levels and enhance efficiency	<ul style="list-style-type: none"> Can PPPs be easily accepted by informal area communities? What levels of sensitisation are required for communities to accept PPPs?
Concerns on profit motive by the private sector	No since there will be efficiency gains	<ul style="list-style-type: none"> What mechanisms should be put in place to assure benefits for both the customers and provider(s)?
Potential risks of a PPP	Lack of ownership by community could lead to vandalism	<ul style="list-style-type: none"> How can ownership by the community be assured?
Areas of focus by a PPP	Increase public access points	<ul style="list-style-type: none"> What measures are needed to increase upon the current levels of access?
The PPP transaction	Must be transparent and open	<ul style="list-style-type: none"> What should a PPP

Issue	Conceptual Label	Key Question(s)
	for public scrutiny and must cater for the very poor and vulnerable	contract for informal area service delivery contain?

Table 24: Open Coding Analysis for Linda Peri-Urban Area

Issue	Conceptual Label	Key Question(s)
Access to water supplies	Supply is extremely inadequate and unreliable	<ul style="list-style-type: none"> Is the provider simply unreliable or is the mode of provision not viable? Why is coverage very low?
Efforts to redress inadequacy of supply	No effort is applied as operator does not seem to have capacity to service the entire area	<ul style="list-style-type: none"> Is it due to inadequate capital resources? Are peri-urban areas not commercially viable for service providers?
Role of the Community	Community should participate in some form	<ul style="list-style-type: none"> Should the Community play an active role, if so to what level?
Maintenance of the network infrastructure	Inadequate maintenance and unskilled manpower	<ul style="list-style-type: none"> Why is there inadequate network maintenance by the providers?
Existing tariff structure too high	Inadequacy of the regulatory framework?	<ul style="list-style-type: none"> The private operator is not regulated?
View by community on the PPP concept for public service delivery	Have some basic knowledge of the concept and believe it can augment service delivery levels and enhance efficiency	<ul style="list-style-type: none"> Can PPPs be easily accepted by informal area communities? What levels of sensitisation are required for communities to accept PPPs?
Concerns on profit motive by the private sector	No since there will be efficiency gains	<ul style="list-style-type: none"> What mechanisms should be put in place to assure benefits for both the customers and provider(s)?
Community acceptance of PPPs	Sensitisation required to enhance ownership	<ul style="list-style-type: none"> How should the community be sensitised?
Potential risks of a PPP	Lack of ownership by community could lead to vandalism	<ul style="list-style-type: none"> How can ownership by the community be assured?
Areas of focus by a PPP	Increase public access points	<ul style="list-style-type: none"> What measures are needed to increase upon the current levels of access?
The PPP transaction	Must be transparent and open for public scrutiny and must cater for the very poor and vulnerable	<ul style="list-style-type: none"> What should a PPP contract for informal area service delivery contain?

Table 25: Development of Categories from the Kanyama and Linda FGDs

Cluster	Conceptual Aspects	Emergent Categories
1	<ul style="list-style-type: none"> • Inadequacy of supply • Lack of effort • Poor maintenance culture • Low response levels 	Existing service delivery mode unsatisfactory
2	<ul style="list-style-type: none"> • Community participation • Community Sensitisation • Community interaction with service provider • Community “ownership” is imperative 	Essentiality of community participation
3	<ul style="list-style-type: none"> • Confidence in private sector participation • Efficiency gains due to private sector involvement 	Private sector can enhance the existing service delivery arrangement
4	<ul style="list-style-type: none"> • Role of private sector must be clearly articulated 	Transparency is imperative
5	<ul style="list-style-type: none"> • Tariffs should be regulated • Needs of the poor and vulnerable to be catered for 	Equitable access for all
6	<ul style="list-style-type: none"> • Inadequacy of supply • Lack of effort • Poor maintenance culture • Tariffs to be regulated 	Essentiality of a sound regulatory framework

Several categories have emerged from the open coding exercise. These include:

- The existing mode of service delivery being unsatisfactory,
- The essentiality of community participation during all stages of the service delivery process,
- The belief that private sector participation can enhance the quality and level of service delivery,
- The contract formulation process between the private and public sectors should be fully transparent,
- The service should be fully accessible to all including the poor and vulnerable, and
- There should be in place a robust regulatory framework.

The principle message emanating from the data so far at this stage points to the need for an alternative service delivery mechanism that can effectively address or cater for all the key issues “inherent” in the categories that have so far emerged. The “categories” also strongly indicate that, the “appropriate service

delivery mechanism” should consist of some “level of participation” by the private sector including a more prominent role for the beneficiary community.

Goulding (2002) notes that, once a concept has been identified, its attributes may be explored in greater depth, and its characteristics dimensionalised in terms of their intensity and weakness. Hunter et al. (2005) extend this assertion stating that the Straussian approach to grounded theory involves using the literature to identify phenomenon. It is therefore imperative that the phenomenon of the private sector operating in partnership with the public sector be further investigated from a theoretical perspective before the next stage of ‘field’ data collection i.e. the interviews is embarked upon. Kelle (2007) in the same vein contended that, the use of previous theoretical knowledge based on a sound methodological and epistemological platform can help a researcher to distinguish between notions that ‘force’ the data and concepts that ‘support the emergence’ of new categories. Bryant and Charmaz (2007) summarise this approach stating that, the grounded theory methodology is designed to encourage researchers’ persistent interaction with their data, while remaining constantly involved with the emerging analyses which ultimately shall enable a researcher to scrutinise all possible theoretical descriptions of their findings (other factors in support of the use of this technique have previously been outlined in section 3.14.1).

4.4 The Interviews

The interviews were conducted using two interview guides with key informants divided into two groups each group having varied experiences and knowledge on informal settlement water service provision in Zambia. The outputs generated from the open-coding presented in Tables 23 and 24 formed the main body of the interview guides (i.e. Appendix 4 and 5).

The first sets of interviews were conducted with informants purposively selected from commercial utilities operating in Zambia using the Semi-Structured Interview Guide No. 2 (ref Appendix 5). All the informants interviewed in this category occupied high level positions in management as shown in Table 26 below:

Table 26: The 1st group of informants

Organisation	Position	Interview ID
Kafubu Water and Sewerage Company	Director of Planning and Development	MKC
Kafubu Water and Sewerage Company	Director of Commercial Services	TNO
Kafubu Water and Sewerage Company	Head of the Peri Urban Unit	TUM
Nkana Water and Sewerage Company	Managing Director	GAN
Nkana Water and Sewerage Company	Director of Operations	RON
Mulonga Water and Sewerage Company	Managing Director	TAP
Lusaka Water and Sewerage Company	Managing Director	JJL

This group of informants provided insights that explained the aspect of provision of water services to informal settlements within areas of their respective utility's jurisdiction from the standpoint of a service provider.

The outputs from this set of interviews revealed the need to conduct further interviews with informants who play an influential role but are not directly responsible on day to day for water service provision. Goulding (2002: p.67) explains this process stating that, *“with grounded theory, groups are chosen when they are needed rather than before the research. Initially, the researcher will go to the most obvious places and the most likely informants in search for information. However, as concepts are identified and the theory starts to develop, further individuals, situations and places may need to be incorporated in order to strengthen the findings”*.

This group of informants (see Table 27) provided insights from a national policy perspective. The organisations represented by this group ensure that government policies for the sector are implemented and adhered to.

Table 27: The 2nd Group of Informants

Organisation	Position	Role of Position	Interviewee ID
The Ministry of Local Government and Housing	Director of Infrastructure and Housing Development	Coordinate infrastructure development including urban and rural water supply and sanitation provision	KZE
The National Water and Sanitation Council	Director (CEO)	Regulation of the Urban Water Supply and Sanitation Sector	TQM
The Devolution Trust Fund	Manager (CEO)	Mobilisation and provision of financial resources to Commercial Utilities to aid the urban poor	QET

Several issues (core categories) emerged from the interviews regarding water service provision to informal settlements in Zambia which are discussed in the next section.

4.5 Emergent Categories

Grounded theory research is especially suitable for the study of processes, and so categories are often expressed as activities directed toward a similar process (Hansen, 2005). The key process being investigated in this research has been outlined in section 1.4 being that of, “conducting an in-depth examination on the existing modes of water service delivery in informal settlements of Zambia and determine their level of effectiveness, viability and sustainability”. Hence the categories (issues) itemised represent the specific activities that constitute the phenomena under investigation.

ISSUE NO 1: ADEQUACY OF WATER SUPPLY

There was general unanimity amongst all the interviewees that the existent levels of supply as provided by their respective organisations were inadequate. Several reasons were cited for this service delivery shortfall.

i) Inadequate Infrastructure

Inadequacy of the infrastructure used to provide water services to the informal settlements emerged as a key inhibiting factor. Statements to this effect included:

...at the moment I would say that we are in terms of water service coverage and sustainability we are at about 40-50%. The problem mainly in these areas is the state of infrastructure; (TAP).

There was even emphasis on the desperate need for mobilisation of capital required to redress the infrastructure deficiency;

...the reason being that I think we would need to do quite a lot of capital investments in order to just upgrade these... informal settlements. What we need is the network extensions those are the ones I think are very vital in order to enhance the service level (TUM).

and

.... we are not satisfied with the access...and this is why we have defined some programs which will address the deficiency, but at the moment we are not able to provide people in the peri urban areas adequate service.... (KZE)

ii) The complexity of informal settlements

The complex nature of informal settlements was also cited as being a major cause for poor and inadequate water supply. The very fact that these settlements develop devoid of any formal planning control by the local authorities makes it difficult to render services such as water provision effectively.

...continued mushrooming of these peri-urban settlements it does pose a challenge and there is need for Government to put in deliberate efforts and mechanisms in providing financing so that we are able to extend service to these areas and serve all the customers (GAN).

...we are talking about challenges of putting infrastructure there because of the unplanned nature of these settlements....to give incentives to the utilities to be able to go in there ...financial incentives because utilities may not invest in these areas from their own collections... to sustain themselves ...they need extra capital to go in there (TQM).

..the way the infrastructure itself, the houses the way they are set, its very difficult to aggregate them to suit the commercial requirement (MKC).

...it makes more sense to provide the service in a formal settlement than in an informal settlement and therefore if a strict business was to be provided one would go for a formal settlement and avoid an informal settlement (RON).

It was suggested by (TQM) that some form of incentives should be devised and made available to the utilities in order to encourage them to allocate capital resources required to construct the necessary infrastructure in the informal settlements because of their many inherent complexities.

ISSUE NO 2: VIABILITY AND SUSTAINABILITY

The viability and overall sustainability of providing water services to informal settlements also featured as a critical factor for the service providers. The generation of profit let alone coverage of operational costs are currently not easily tenable, thus impeding the various utilities from willingly venturing into these areas. Statements made to this effect included:

...It's not viable at the moment.... what I would suggest iscustomer participation or community participation where by ...we can sell water not to individuals but to an agent in bulk and then he sells to various individuals, in that way, we are able to reduce our cost and also we are able to share the cost with the agent themselves (TNO).

...the maintenance of the infrastructure goes at great cost compared to the revenue that comes out of there (RON).

The observation made by (TNO) not only alludes to the non-viability of the current arrangement where the utility operates and manages an informal settlement network but also suggests an alternative service delivery model where the utility provides the water in bulk to an independent entity (agent!) who “on-sells” the water to the community at a profit, which is actually in conformity with the “management contract³⁵” service delivery arrangement.

³⁵ This management model type has been explained in Section 2.5.7

A new dimension in addition to that espoused by (TNO) was brought to the fore by (GAN), (TUM) and (TAP) who indicated that the utilities are only able to sustain services in these areas through a cross subsidy arrangement i.e. revenues from the so called affluent viable segments of the service delivery area (i.e. formal settlements) are “transposed” to support the informal settlements.

...In these areas ...we are not able to make money...service to the peri-urban is what I can say already subsidised because the cost of providing the service is much higher than the income we get from these areas. When we look at other areas that we serve, these are other areas that are helping us run,... to some extent subsidising the low income areas. ... as a result there is no excess income that could be used to actually provide or extend service to these peri-urban areas (GAN).

..., provision of service to these areas is not viable, ...because the cost of providing this service is much higher and then we are providing water ...in some cases we find that the revenues coming from these central points is inadequate ... we find that the actual consumption is much lower than in these other areas so the income is actually much, much less than what we actually spend in these areas, so to actually provide a service there is not commercially viable (GAN).

Inadequate sales volume or turnover has also been identified by (GAN) as a reason for low cost coverage in the informal settlements. Statements that indicated that the informal settlements are already heavily subsidised by utilities included:

....they are subsidised by these low density areas where we are able to generate money from... (TUM).

... the revenue from these informal sectors or the business concept to these informal sector at the moment is not sustainable ... the tariff structure does not support it and also just a fact that you know these customers their ability to pay, the effort that you are going to put in to collect the little that you bill them, and ...the cloud of the political interference or political involvement in these structures because this is where you've got all these people who have got a bigger voice... business to these areas is non-sustainable (TAP).

....on their own if we were to say that we ring fence and compartmentalise our ... operations and say that each area stands on its own, these areas will not survive (TAP).

A slightly different view was however put forward by (JJL) who argued that viability can be somewhat attained if the informal settlements are extremely large and very densely populated like in the Capital City of Zambia and a delegated management mechanism put in place whereby other players are invited by the mandated provider to participate. However, the tariff regime would need to be up-scaled. Statements included:

...think right now the services that we are providing are really not viable for the simple reason that the tariffs are on the lower side ... However, it's very interesting that for us especially here in Lusaka where we have tried to have delegated management systems to provision of services, we see that there is a high possibility of making this service provision closer to being viable... (JJL)

ISSUE NO 3: THE ASPECT OF MANDATE

The very fact that service providers are obliged to provide a service to all within their area of jurisdiction through a licence issued by the water regulator NWASCO compels the service providers to devise some workable and sustainable service delivery model. This viewpoint mainly emanated from the second group of informants listed in Table 27 i.e. the specially selected informants who emanated from organisation's whose prime role is to ensure that government policies are implemented and adhered to;

...the very fact that an institution is mandated to provide a service...throughout a given area which includes both formal and informal settlements means that they are obliged to provide the service to all,...we need innovative leadership in the utilities ... (KZE).

...I think that in the business plans, in their long term plans they should focus on the unplanned settlements because like I said that is where the majority of their people are... (KZE).

....the utilities are supposed to provide a service in their licensed area and usually these areas are within the licensed area of the provider and hence the mandate is that everyone within the licensed area should be provided with water...(TQM).

The service providers are expected (notwithstanding their existent challenges) to be innovative and devise strategies that shall enable service delivery to the informal settlements.

ISSUE NO 4: PROVISION OF INCENTIVES (INCENTIVISATION)

There was unanimity amongst the informants on the aspect of provision of water services to informal settlements being financially non-viable as they are not able to fully cover their costs. They also indicated that the prevailing tariffs are below economical levels. To mitigate this they proposed that incentives should be encouraged and availed to the utilities which would act as “bait” or motivation for them to render services to the informal settlements with minimal difficulty.

Comments included:

.....but I think we still need to do a lot especially when it comes to managing these peri urban schemes but they are trying I think they have their own limitations especially when it comes to finances(QET).

...all revenues are required as much as possible to improve the water infrastructure because it has outlived its life span and therefore, we need to find money beyond the revenues even by cross subsidy within the sector ... (RON).

and

... and the utilities are not able to stretch their current revenues from the formal settlements to the informal settlements and therefore the government through taxation can consider giving grants on a continuous basis (RON).

...so in terms of incentives we could be looking at both financial and non-financial incentives.....looking at providing resources that would allow utilities to be able to provide services to these informal settlements (TQM).

Non-financial we are looking at compelling or creating an environment where utilities find it easy to provide water in the informal settlements. So the regulator should look at incentives in a wider kind of arrangement than narrowing it to just financial incentives (TQM).

... challenges of putting infrastructure there because of the unplanned nature of these settlements.....trying to give incentives to the utilities to be able to go in there and basically we are talking about financial incentives because utilities may not invest in these areas from their own collections because they are still yet to... be able to sustain themselves so they need extra capital (TQM)....

...there is also an issue of trying to manage the service in that area. I know some utilities that have struggled in spite of interventions in those areas but managing a service in those areas has been a challenge because of the perceived low levels of consumption and hence low incomes...coming from these peri urban areas (TQM).

These comments are emanating from the back drop of government's policy to have all within a service area adequately serviced by the licensed service providers. It is thus being advocated that as a means to fulfilling this policy, incentives should be devised and implemented so as to encourage and enable the mandated service providers to provide services in these areas with minimal difficulty.

ISSUE NO 5: PARTNERSHIPS FOR SERVICE DELIVERY

Partnerships for service delivery were singled out as a feasible management mechanism for water service provision to informal settlements. Most informants recommended a three partner approach i.e. the service provider, the community based organisation charged to oversee water access and provision and the vendor employed to conduct daily water sales. One informant (TQM) suggested that the local authority should be included as the fourth partner;

...I think one of the critical partners that needs to be engaged when you are providing water in these informal settlements is the local authority because I think they play a critical role to co-ordinate development and if there is no co-ordination, we will continue to see these informal settlements mushrooming need to work closely together with the local authority and see if we can avoid some of the unplanned settlements, ...(TQM).

...so a partnership between the water utilities and the local authorities is paramount to stop any further increase in the informal settlements (RON).

The stance taken by (TQM) in support of a four member partnership deals with the unresolved issue of how to stem further development of informal settlements in light of the challenges being faced by public service providers. As the local authority plays a critical role in coordinating development, there would be a need for them to help service providers during the upgrading and expansion of the existing networks and also to use the lessons learnt from the upgrading process to avert similar occurrences in future which are extremely costly from both a financial and social perspective. Other statements in support of partnerships were:

...private sector partnership would work very well, but of course we need community participation as well (TNO).

...it provides a mechanism whereby sensitisation can be provided through a leadership that is already recognized and therefore you are using structures that the people themselves have selected instead of imposing a new super structure that would require a lot of sensitisation for that leadership itself to be accepted, so its a good partnership for the RDCs to be part of the arrangement...(RON).

... a very aggressive participation of the community, the private sector being on the other side and the community should be very much part of whatever activities taking place (TUM).

...then these informal areas, we should be able to come up with some form of trust, some cooperative, some local arrangement under the Resident Development Committees and be able to ensure that these people run these systems. ... it will be a question of you know they run these as small scale businesses, then for us our role is just to provide them with bulk water up to a certain point,...it's something that we can model in Zambia and see how it benefits the water utilities (TAP).

...for us what we have seen to be working is partnering with the community we create a small ...community based...utility if you like to help us to manage the facilities, the water service provision in that area (JLL).

The general consensus amongst the majority of the respondents as inferred from the various statements was that effective water service provision in informal settlements can only be garnered with some form of partnership arrangement. The cardinal issues however, are on the type and specific composition of the

members of the partnership arrangement and a clear clarification of each of their roles, responsibilities and the extent or level of risk assumption. It was also suggested that the beneficiary communities should undergo prior training on various business principles and techniques to enable them to participate more effectively and also reduce the risk of failure.

...their own aspirations and their own benefits to pursue ...but if they are properly coached in some agreements...I think that in the end they will be more beneficial than they will be detrimental (KZE).

...I think the major risk that would be there is that you have got to upscale the skills of these people, you've got to see to it that they are trained (TAP).

... so whoever wants to provide water, I know this is a noble cause, they should be able to partner with the utilities, so that the utility can give guidance in terms of the type of service can be provided in that area, the technology and also just the equipment that needs to be installed because at the end of the day, the utility has got a lot of experience (TQM).

There is however an implied acknowledgement by government that the issue of establishing a workable, viable and sustainable service delivery mechanism for water provision to informal settlements is complex and requires concerted efforts by all stakeholders to find and devise a workable solution

4.6 Summary

This chapter set out to present the data collected from the various methods in line with the grounded theory approach. Several key issues have emerged from the data after being subjected to rigorous process of constant comparison where areas of similarity and or difference were identified. The data also reveals the points of variance between the **principal** i.e. government and **agent** i.e. the service providers in that the service providers tended to base their arguments only on their daily experiences and the overall adverse nature of their current operational environment. The policy makers on the other hand tended to, notwithstanding the existing operational encumbrances faced by the service providers, demand for more innovation from the service providers in the hope

that the problems would eventually 'even out' naturally. This 'stalemate' underscores the need for determination of a lasting but workable service delivery mechanism which incorporates and caters for all the factors that are responsible for the current levels of water service delivery which have been shown to be inadequate and below consumer expectation.

The issues (phenomena) identified include:

- The Intricate Nature of Informal Settlements,
- Viability and Sustainability,
- The Service Delivery Mandate,
- The Necessity of Incentives, and
- Partnerships.

The phenomena identified through the data collection process will be discussed and analysed in detail in the subsequent chapter.

CHAPTER FIVE: MECHANISMS OF INFORMAL SETTLEMENT WATER SUPPLY: A DISCUSSION

5.1 Introduction

This section discusses and analyses the key findings of the research process presented in the preceding chapter. The existing weaknesses inherent in the existent informal settlement modes of water service delivery are outlined and the factors needed to enhance the overall viability and sustainability of the service delivery process from a service provider's perspective are also dealt with. The various identified categories are integrated so as to enable the eventual formulation and development of theoretical propositions with respect to informal settlement water supply in Zambia.

The following were the phenomena identified in the preceding chapter;

Phenomenon One: The Intricate Nature of Informal Settlements

Phenomenon Two: Viability and Sustainability

Phenomenon Three: The Service Delivery Mandate

Phenomenon Four: Incentives

Phenomenon Five: Partnerships

Each of these phenomena are analysed in more detail in the subsequent subsections of this chapter, with particular emphasis being placed on their particular impacts on the service delivery process.

5.2 Phenomenon One: The Intricate Nature of Informal Settlements

The complex nature of Informal Settlements stood out to be an issue that adversely impacts effective water supply to these areas. Effective water supply to an array of housing units demands certain planning considerations such as a well-defined geometric array of the housing units coupled with adequate

provisions for other municipal services such as access roads, sewerage reticulation and storm water drainage. The very fact that these settlements have developed without adherence to these requirements only complicates the provision of municipal services such as water supply. Service providers will always tend to 'resist' venturing into these areas since the capital and social cost of installing the required infrastructure will in most if not all cases be exceedingly high since actions such as demolitions and relocations to pave way for a systematic, well laid out array of the network infrastructure will be inevitable.

This should be addressed from two main fronts namely;

- (i) The informal settlements should be "reconfigured" as far as is as practical as possible to enable the installation of the required network infrastructure. These interventions however, would carry a huge capital cost as has been observed by (TUM).
- (ii) The continued development and growth of these settlements should be 'stemmed' by the responsible authorities in this case being the local authorities with full support from the government. The many challenges being currently faced with regard to provision of service delivery infrastructure in the many already existing informal settlements should serve as 'good enough bait' for quick action. This argument can further be reinforced by the very fact that the majority of the urban populations reside in these areas hence improving their access to a critical commodity such as water is politically prudent.

One can infer that there is a serious failure on the part of the local planning authorities (the municipalities) when it comes to regulating the development and eventual growth of these settlements. This failure is further exacerbated by a lack of political will and support on the part of government who in most cases give tacit recognition of these areas for the sake of political expediency as a good proportion of the electorate reside in these areas. This continued stance in the end proves to be very costly at a national level as these areas are characterised by frequent disease outbreaks due to inadequate service delivery coupled with

generally very poor living standards which in turn place an enormous burden on the already strained national finances as government time and again has to respond to emergency calls to ameliorate the resultant state of pandemonium.

5.3 Phenomenon Two: Viability and Sustainability

The viability of water service provision to informal settlements is critical if services are to be provided according to the population's expectation levels. The service providers were unanimous in stating that water service provision to the informal settlements in itself is not a viable proposition. Reasons advanced included prevailing low rates of cost recovery due to sub-economic tariffs, low sales turnover partly due to low consumption rates and the complex array of the housing layouts which inhibit the provision of geometrically arranged water supply pipe networks which a well laid out efficient water network demands (TUM, RON and TAP). They further indicated that the service only becomes viable and sustainable when revenues from the affluent communities are used to compliment the meagre revenues garnered from the said informal settlements which is a form of cross subsidisation. These factors serve as a serious encumbrance to the mandated providers' quest to provide an effective quality service. Ostrom et al. (1993) in describing the attitude that an individual or entity operating public infrastructure has to have in order to operate sustainably contended that the entity would continue to invest in the maintenance aspects of it's operational framework so long as the expected returns from the entire exceed the capital costs.

Cross subsidisation in this case is therefore unavoidable as the utility is expected to service all within its area of jurisdiction equitably. But, however, the utility will need some form of catalyst to enable it service the informal areas more effectively.

Since the overarching mandate for water service provision is vested in the government through the local authorities it has established³⁶, it follows that the government ought to devise strategies that can be used to encourage the service providers to provide the required level of services to informal settlements such as financial incentives that will indirectly subsidise the operation. A review of the existing policy pronouncements conducted in the earlier part of study³⁷ revealed that there are no policy pronouncements that are specifically earmarked to encourage service providers to effectively serve the informal settlements, which are the most complex segment of the urban water service provision sector where it was stated thus;

“As regards water supply to informal areas, the National Water Policy is surprisingly silent on specific pronouncements that prescribe how water supply can be improved in informal settlements in light of the existent low access levels and the very unique characteristics of these areas”³⁸.

This omission in the policy framework negates the overall quest that government desires which is to substantially enhance water service provision to the informal settlements. Another aspect has to do with the danger of over reliance on revenues accrued through the so called cross subsidy arrangement being advocated for. Reassignment of the regenerated resources from the well performing affluent areas has its limitations as routine care, maintenance and refurbishment works need to be continually effected on the network infrastructure used to convey services to the ‘well performing’ areas. The service providers therefore run the risk of neglecting this responsibility at the expense of ‘appeasing’ the informal settlements which would ultimately lead to an entire breakdown or failure of the whole system.

³⁶ Section 2.5.3 explains the legal framework for water provision in Zambia and the position of both the government and local authorities with respect to overall mandate

³⁷ See sections 2.5.1 and 2.5.2

³⁸ Refer section 2.5.2 page 51– The Policy Framework

Viability and sustainability are therefore extremely critical elements for effective water service provision to informal settlements and would need to be assured by all stakeholders.

5.4 Phenomenon Three: The Service Delivery Mandate

Urban water service delivery in Zambia is through a process of 'delegated mandate' i.e. from government to local authority to commercial utility³⁹. The government through legislation has already granted exclusive mandate⁴⁰ for public water provision in urban areas to the established utilities. This mandate clause though well intentioned has its shortcomings when viewed in light of service provision to the informal settlements. All the respondents have strongly indicated that the current service levels are inadequate and need actions such as incentive provision to enhance service efficiency. One respondent (KZE) placed the problem squarely on the laps of the service providers.

The utilities cannot resolve this problem single-handedly as advocated by (KZE). Issues such as mobilisation of capital to improve upon and expand the existing infrastructure, effecting of cost recovering tariffs and reconfiguring the informal settlement housing array to allow for appropriate network installation require participation by all the relevant stakeholders. The insistence on good performance from the service providers by the government on account of the existence of the 'exclusive mandate' would only serve to 'erode' their effectiveness in the areas where they are currently providing a good level of service. The service delivery mandate should therefore not be viewed in isolation but in collaboration with the other identified factors.

5.5 Phenomenon Four: Incentives

Incentive provision by the **principal** (government and local authority) to the **agent** (service provider) was strongly advocated for by most of the informants as

³⁹ See section 2.5.3 – The Legal Framework

⁴⁰ This is executed through issuance of geographically based and defined licences by the entity established to regulate water services provision, NWASCO

it would serve to motivate or encourage more attention from the service providers to servicing informal settlements. This standpoint is mainly on account of the non-viability and sustainability of service provision to these settlements in their current form. Most respondents indicated that current levels of service to these were grossly inadequate. Table 28 below shows the focus group responses from the various community sub groups in Kanyama informal settlement area in Lusaka.

Table 28: Responses from the Kanyama Focus Group Discussions

	RDC	Water Committee	Women Group	Health Committee	Youth Group
Problem Severity	Extreme, supply is inadequate	Moderate as supply is adequate	Extreme; some days pass without any supply	Extreme. High incidence of water borne diseases. People walk long distances	Severe as 50% of area has inadequate supply
Level of corrective action by authorities	Very Poor especially in unserved areas regarded as illegal	Efforts are there except that mobilisation of capital remains a challenge	Nothing is being done	Reactive to disease outbreaks but very poor	Nothing tangible at the moment

Source: Focus Group Discussions conducted in Kanyama Settlement 2007

The experiences encountered by the beneficiaries indicate that the quality of service is well below expectation as shown in Table 28. The service providers were of the same view too:

...at the moment I would say that we are in terms of water service coverage and sustainability we are at about 40-50%. The problem mainly in these areas is the state of infrastructure; you know its quite some very, very big challenge (TAP).

...the reason being that I would rate it at 50%...coverage ...we would need to do quite a lot of capital investments in order to just upgrade these... informal settlements. What we need is the network extensions those are the ones I think are very vital in order to enhance the service level (TUM).

One of the main problems that this state of affairs poses is that of ***under-production*** or ***undersupply*** by the service provider in order to minimise financial losses. This would actually be much more prevalent in a case where a private operator was to be the service provider with all other operational factors remaining the same.

The shortcomings outlined above underscore the need for incentives to be availed. Winston (2006) and Cowen (1999) explain that most public goods that are principally aimed at enhancing social welfare are generally provided by governments using tax revenues as their main source of financing. Franceys (2008a) holds a similar view arguing that the current operational shortcomings or weaknesses are likely a result of the existent socio-economic conditions in which the operators must operate and that redress may only be garnered through provision of long-term support.

The position in favour of availing financial incentives is not only applicable to developing countries, in England for example, the regulatory body called the Water Services Regulatory Authority (OFWAT) availed financial incentives to the water service providers in order for them to exceed their originally set efficiency targets which in turn would positively impact their profitability and also mitigate against excessive tariff increases for the consumers (Franceys, 2008b). Types of financial incentives may include:

- subsidy provision to help assure full cost recovery and mitigate low tariffs and or low sales volumes in informal settlements,
- financial guarantees to mitigate operational risks,
- tax exemptions,
- soft loan provision, and
- favourable regulatory provisions (which are pro – poor).

It must be appreciated that the ultimate responsibility for service provision is held by the government and therefore government ought to 'drive this process' right from the onset and bring on board all the other entities that can aid this quest.

5.6 Phenomenon Five: Partnerships

The results indicated that a water service delivery arrangement where an organisation or entity assumes sole responsibility for service provision is not a workable proposition. The very complex nature of informal settlements demands that several different actors with different and unique attributes form a strategic alliance or partnership which would serve as the optimal vehicle for service delivery. Statements in support of partnerships for service delivery included:

...private sector partnership would work very well, but of course we need community participation as well (TNO).

...I would suggest I think a very aggressive participation of the community, the private sector being on the other side and the community should be very much part of whatever activities taking place... (TUM).

...and one of the partnerships may be that could work is the utility partnering with entities, well registered entities, may be private, small private operators those that have a history of running business, am sure that can work (SG).

... some local arrangement under the Resident Development Committees and be able to ensure that these people run these systems...its something that we can model in Zambia and see how it benefits the water utilities (TAP).

...for us what we have seen to be working is partnering with the community and the approach we are doing now is to have delegated management systems in the peri urban areas where we create a small ...community based...utility if you like to help us to manage the facilities(JJL).

....I think one of the critical partners that needs to be engaged when you are providing water in these informal settlements is the local authority because I think they play a critical role to co-ordinate development... (TQM).

The respondents' overwhelmingly advocate for a four member partnership arrangement which consists of the service provider, a 'home grown' private operator, the community based organisation overseeing water access and the local authority.

5.7 The Interrelationships

It is imperative at this juncture to demonstrate the main interrelationships amongst the phenomena discussed with regard to informal settlement water

supply. This approach enhances coherence amongst the main emergent categories which in the grounded theory methodology helps to move the “*analytical story in a theoretical direction*” (Charmaz, 2006: p.63). These relationships are illustrated in Figure 26 below;

- The first interrelationship is between that of ***inadequate water supplied*** by the service providers to informal settlements and the lack of ***viability and sustainability*** of the service delivery process itself. The respondents who were service providers indicated that the process was not financially viable in its current state. This lack of financial viability resulted in under production
- The second interrelationship is between the attainment of ***viability and sustainability*** of the service through adoption of the ***partnership*** service delivery approach. The overwhelming proposition was for service delivery through a partnership arrangement between four principal actors with the introduction of appropriate ***incentives*** that shall in turn assure viability and sustainability.
- The last key interrelationship is that concerned with the exclusive ***mandate*** provision. It was determined that the existence of an exclusive mandate for service provision was not adequate in itself but required the provision of operational incentives to enhance viability and sustainability

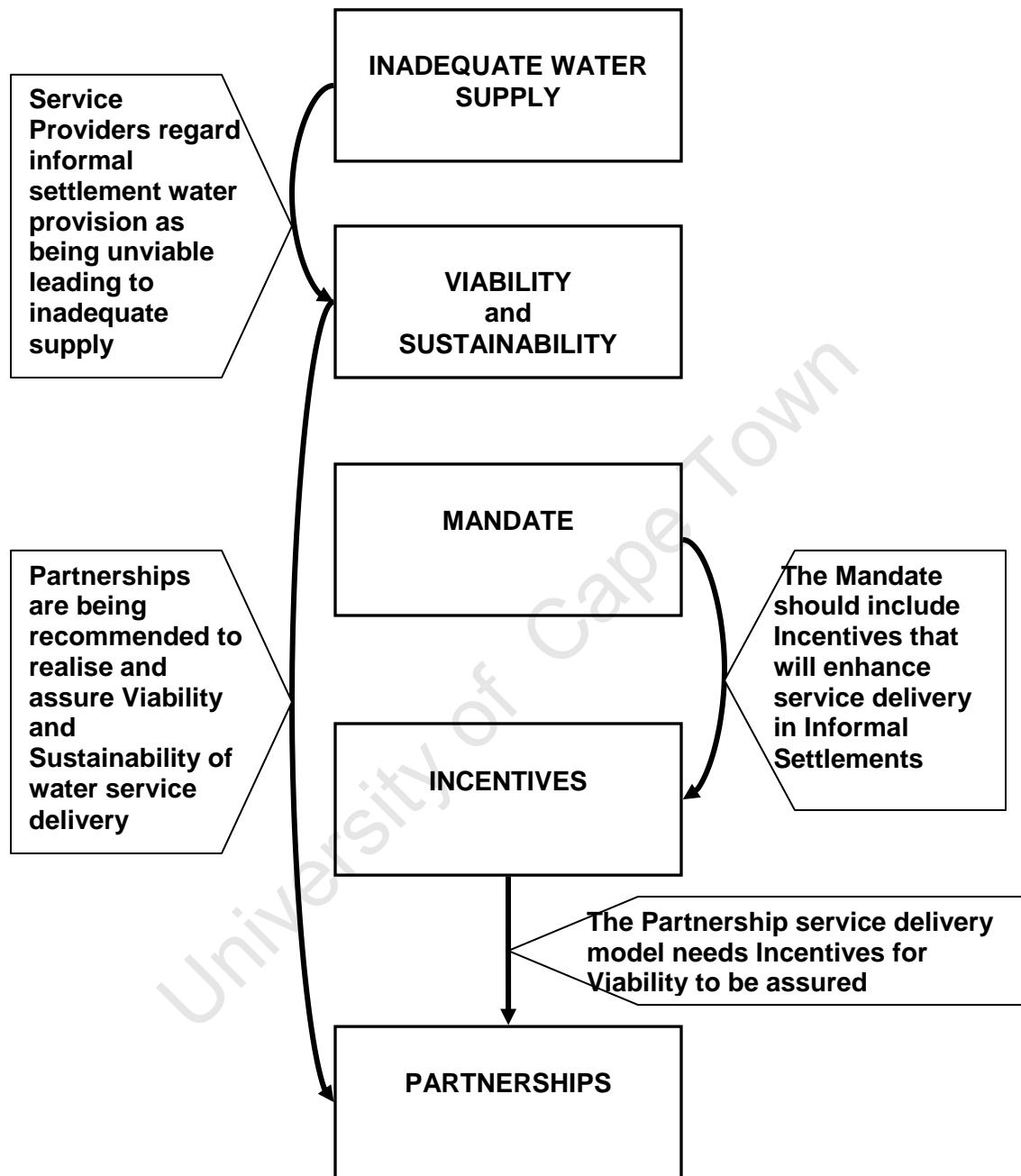


Figure 26: The Interrelationships amongst the identified phenomena (by the author)

5.8 The Quad Array Partnership Model for Service Delivery

The development of a potential alternative service delivery mechanism or model that could address the current deficient levels of informal settlement water provision in Zambia was one of the principal aims of this study. The '***quad-array partnership model***' which attempts to address all of the enumerated impediments to informal settlement water supply has been formulated as a direct output from the data collected and analysed during the course of this study. The pre-fix 'quad' refers to the number of key partners (or actors) participating in the partnership which is four namely; the mandated service provider, the 'home-grown' private enterprise, the community based organisation charged with the responsibility of overseeing water access and provision and the local authority.

This partnership model as can be seen has included a prominent role for the local authority. It has been acknowledged that the complex nature of these settlements serves as a major impediment to effective service delivery, be it water, sewerage and even solid waste collection. As the local authority bears responsibility for municipal development it is only logical that they fully participate so that the continued growth of illegal poorly planned settlements is inhibited.

Another key feature is that concerning the private partner. The respondents indicated that a local or 'home-grown' private entrepreneur would be most suited for this task as they are well versed with the various facets that may impede or even exacerbate service provision. The experiences encountered in Uganda for example underscore this standpoint where firstly a German firm was engaged to manage water supply in Kampala excluding water production and sewerage for two and a half years. Thereafter a French firm was engaged for two years to manage water supply in Kampala including sewerage services. Muhairwe (2009) notes that, both international operators were not familiar with the local environment and in both instances the operators failed to cope with the local situation. The results of these contracts were below expectation and proved to be very costly and bureaucratic. Muhairwe (2009: p.176) concludes by asserting

that, *“the performance of both management contracts demonstrated that international private sector participation was not the best way to go”*. This experience then indicates that a operator chosen to manage water service delivery on an agent basis ought to be familiar with local demands and conditions obtaining in the service area.

Other key features of the model include:

- its level of inclusiveness in that all the relevant stakeholders are included and play a key role which helps to assure widespread acceptability amongst the beneficiary community;
- it helps to create employment within the community through the award of ‘small maintenance activities’ to local entrepreneurs which augments poverty reduction;
- it can be possibly adapted for use for other service delivery sectors such as solid waste collection and possibly community based sanitation;
- it helps to reduce water theft and wastage both of which are currently widespread within the informal settlements; and
- it ‘frees’ the utility from day to day management of informal settlement service provision enabling them to concentrate on the more profitable segments of their service delivery area, which in turn avails more resources for cross subsidisation of the informal settlements.

The ‘quad array model’ is illustrated in Figure 27 below;

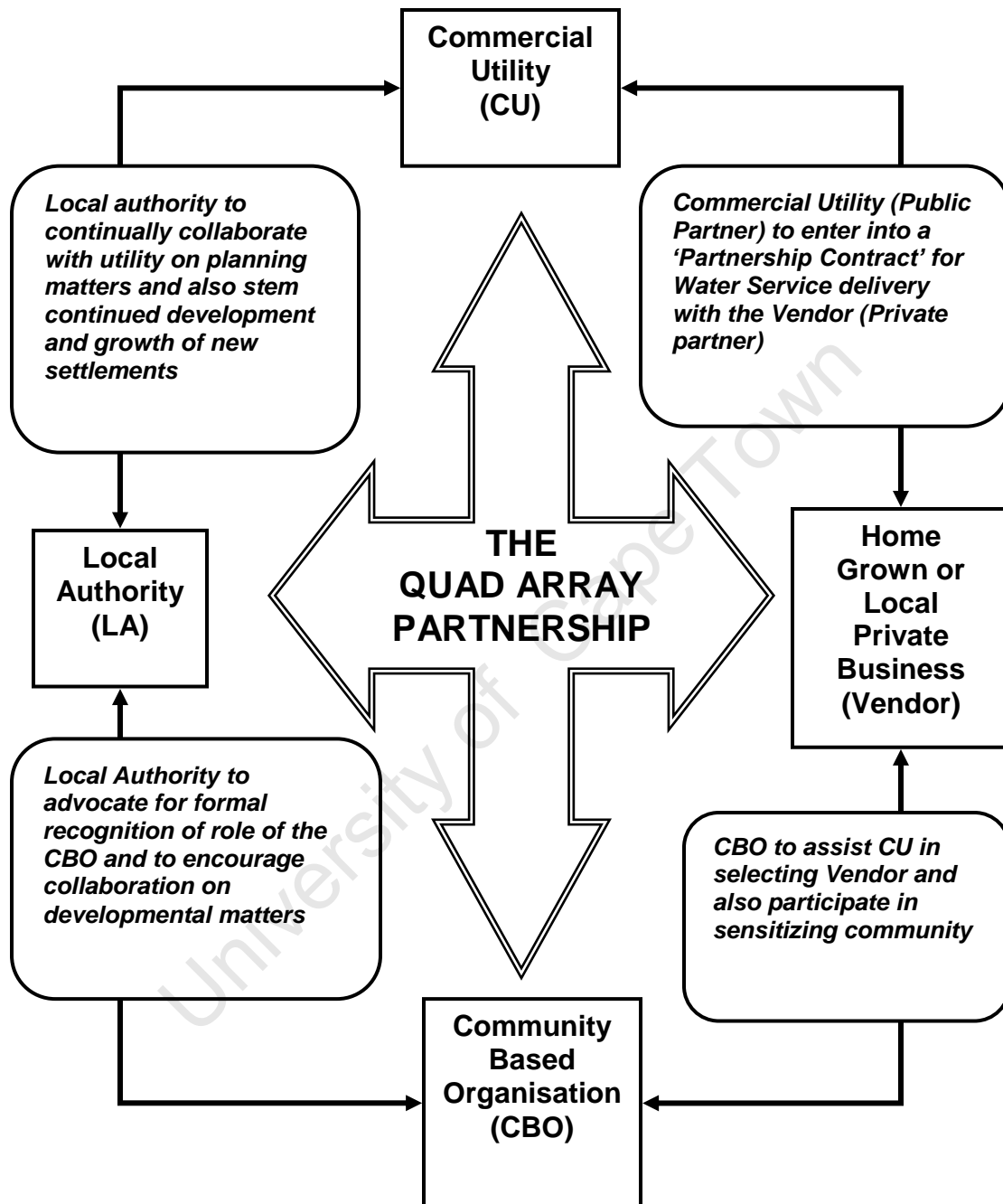


Figure 27: The Quad Array Partnership

It has been assumed that the various prescriptions emanating from the analysis of the phenomena in the preceding sub-section would be implemented to the letter for the model to function successfully.

5.9 Substantive Theory Development Statement for the Quad Array Partnership Model

This study's area of inquiry was to garner a better understanding and explanation of an existent problem in an organisational setting namely water services provision to informal settlements of Zambia. Glaser and Strauss (1967) explained that substantive theory was that which was developed for a substantive or empirical area of sociological enquiry such as a formal organisation. They argued further that substantive theory could be generated "*by comparative analysis between or among groups within the same substantive area*" (Glaser and Strauss, 1967: p.33).

The methodological process employed in this study was heavily reliant on constant comparison of the data as it emerged at every stage as extracted from the different informant groups (ref section 4.4). The data was grouped in terms of similarity after being made sense of and theoretical properties were developed only after category saturation (or no new data emerged) was attained (section 4.5). These properties offered explanations for the phenomena under investigation including the level and extent of the interrelationships between the identified phenomena (section 5.7). The quad array model for service delivery was based fully on the data collected from the study as all its operational attributes are derived and based on the collected data.

5.10 The Operational Mechanisms of the Model

The key operational features of the model are those concerned with the roles and responsibilities of each of the principal actors in the partnership. Each actor has distinct roles and responsibilities which are imperative for success.

i) Partner Member One: The Commercial Utility

The CU is the license holder for water service provision to any informal settlement within its licensed geographical area. Through the partnership it sub-contracts or delegates its 'operational mandate' to a private entrepreneur (most preferably emanating from the said informal settlement) who would manage the water sales and oversee minor maintenance activities within the area. The entrepreneur is remunerated on a commission basis based on the sales volume and also for the costs incurred to conduct the minor maintenance activities. This arrangement is referred to as the management contract type of partnership. The contract agreement should clearly stipulate the responsibilities and rights of each party and expected levels of performance and should receive a 'no-objection' from the water regulatory authority.

ii) Partner Member Two: The Private Entrepreneur (Vendor)

The vendor as already stated enters into a management contract with the CU. Despite having operational responsibility through this contract, the vendor shall need to liaise closely with the community based organisation responsible for water access on activities such as hygiene awareness with respect to water usage, preventive maintenance, water wastage, pilferage, vandalism and payment for water services received. It is also important that the vendor is availed some form of training to enhance knowledge in entrepreneurial skills and general contract management.

iii) Partner Member Three: The Community Based Organisation

The benefits that accrue to this member are not financial but more correlated to the attainment of social capital and general stability through upliftment of the quality of life of the community. The CBO is also extremely influential amongst the community in the service delivery process as their voice is deemed to fully represent the communities in developmental matters. In Zambia the CBO that is charged by the community to oversee developmental matters is called the Residents' Development Committee (RDC) or Ward Development Committee (WDC). The RDC or WDC are democratically voted

into office by the community through elections conducted within the community. The election process enhances the confidence levels that the community have in the RDC or WDC. They are also recognised by the local authorities as a lower tier (with respect to the local authority) governance structure within the community. They also serve as a conduit through which feedback on how the quality of service is perceived by the recipient communities and on any major concerns and or complaints.

iv) Partner Member Four: The Local Authority

The local authority plays a key role in facilitating interventions concerned with land ownership and general municipal planning. Informal settlements have been described as, “*settlements that grow devoid of any municipal planning*” and where the standards of construction fall well below the minimum acceptable standards. The problems associated with service delivery to informal settlements can only be minimised if the local authority spearheads the development process (in this case development refers to the upgrading of existing informal settlements to acceptable standards). In addition, the local authority can also help stem the continued development of these areas. A noticeable short coming in Zambia’s institutional framework for water service delivery has been the rather insignificant role that is played by the local authority, and yet they are the sole institution that possesses legal authority on settlement formation and development. It is clear that the existent problems and challenges in this sector will continue to grow if a holistic approach that includes local authorities is not adopted. Political will and clarity on this issue is thus required from government if the local authorities are to succeed.

One key challenge that would need particular attention from all the stakeholders is that of determining the optimal reward level due to the private entrepreneur. This is important because performance can be adversely affected if this issue is not addressed effectively. This condition is what is referred to as the principal-agent problem which is concerned with treatment of problems that arise under

conditions of incomplete and asymmetric information⁴¹ (Eisenhardt, 1989; Laffont and Matrimort, 2002). The issues include:

- how to ensure that the agent performs the delegated functions diligently;
- determination of the optimal level of incentives;
- determination of the optimal remuneration levels;
- how to avert the agent accruing excess profits at the expense of the prescribed service delivery standards; and
- how to effectively monitor the agent.

It is suggested that the regulatory authority assists during the design of the contract as they have at their disposal vast amounts of valuable information collected during their regulation of the sector on matters such as optimal performance levels and the acceptable tariffs.

5.11 The Quad Array Partnership from a PPP Perspective

The literature reviewed in the preceding sections defined and articulated the basic character of PPPs. First and foremost the actors in the partnership may be public, private, non-governmental organisations (NGOs) or any group of individuals which could fundamentally have different objectives, values, cultures, structures, but agree to share risks, responsibilities, resources, competencies while sharing common goals. Other characteristics include (Bult-Spiering and Dewulf, 2006), Li and Akintoye (2003):

- i) ***there being two or more actors one of whom is from the private sector*** (i.e. the local private vendor is from the private sector in the quad array model)
- ii) ***each partner to the arrangement having the capability to bargain on it's own behalf***. In the quad array model each party bargains it's own terms though consensus amongst all the parties has to be arrived at as the benefits are mutual

⁴¹ The Principal-Agent Problem has been discussed in section 2.7.3

- iii) ***an establishment of an enduring and stable relationship amongst the actors.*** It is in the interest of the actors to collaborate as they all benefit from the proceeds and outcomes
- iv) ***there being a shared responsibility for the activities and the eventual outcomes.*** In the quad array partnership the roles and responsibilities are shared in accordance with each participating entity's resources which include general influence (the local authority and community based organisation), public confidence (the community based organisation and local private vendor and utility to a lesser extent), financial (the utility), human (the local private vendor and utility) and infrastructure (the utility).
- v) ***a reduced role of government.*** The quad array partnership increases the level of participation of the private sector as responsibility for day to day management of the service provision operation is passed on from the publicly owned entity, the utility, and passed on to the private sector

5.12 Summary

This section reviewed and discussed in detail the key findings that have emerged from this study. The findings have revealed that informal settlement water supply requires active participation of several players working in a partnership arrangement in order to achieve enhanced levels of access and quality. The critical nature of the roles of the community based organisation and the local authority both of whom do not derive any financial benefits from the partnership have been outlined. The local authority for example will have to play a major role to facilitate eventual installation of appropriately designed network infrastructure. Another important factor looked at was that of incentive provision which can act as a strong catalyst for improved service delivery. The findings therefore strongly suggest a paradigm shift from the current modes of service delivery to the more 'enhanced type' which incorporates all the key points of concern raised by the various respondents.

CHAPTER SIX: CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

6.1 Introduction

The previous section dwelt on the detailed analysis of the core categories that have prominently emerged from the key findings of this study and culminated in the formulation and development of a proposed management model for informal settlement water supply. This section summarises the main arguments and outlines the resultant recommendations. Theoretical propositions with regard to informal settlement water supply have also been stated in this chapter as, this research was undertaken using the grounded theory methodological approach – Straussian version, which enables a researcher to generate theoretical insights from qualitative data or where theory emerges from the data (Charmaz, 2006; Goulding, 2002). It concludes with a narrative on this research's contribution to the 'body of knowledge' and recommendations for further research.

6.2 Addition to the Body of Knowledge

The study set out to address an existent knowledge deficiency on how informal settlement water service provision in Zambia can be viably and sustainably enhanced. The *contribution to knowledge* arising out of this study is that, public private partnership arrangements between the mandated publicly owned water service providers and private entrepreneurs are unavoidable if informal area water service delivery is to be substantially augmented. The partnerships must incorporate the relevant financial incentives required by the operators in order to assure viability and sustainability (the remodelled partnership arrangement recommended in this study termed the 'quad array partnership' consisting of four key distinct members has been illustrated and explained in the preceding sections). Another key unique feature inherent in this model is that, apart from enhancing service efficiency, viability and sustainability, it also serves to 'correct' the disorder that the uncontrolled development of settlements has brought to bear on public service provision through a much more enhanced and pronounced

role for the local authority which has to be underpinned with increased political will from the government.

The study therefore contributes to the body of knowledge on public private partnerships. The quad array partnership model developed in this study explains the way in which public private partnerships can be formulated to render water service delivery in informal settlements in developing countries.

6.3 Implications for Government

The research has revealed several aspects that require redress to enhance the overall effectiveness, viability and sustainability of water service provision to informal settlements in Zambia. The following are the key implications for government emanating from the findings and analysis:

6.3.1 The Policy Framework

The following policy related aspects need to be strengthened and or included in the policy framework.

- i) The existing national water policy does not make any specific pronouncements solely dedicated to the enhancement of informal area water supply despite it being the most complex segment in the urban water supply sector. *There is need for the inclusion of these pronouncements to reflect the urgency that is demanded from all the affected stakeholders in resolving this problem.*
- ii) The review revealed that there is a 'lack of convergence' or conflict between the law that governs the development and subdivision of land namely the Town and Country Planning Act Cap 283 (GRZ, 1962) and the laws that govern elections namely the Electoral Act (GRZ, 1991a) and the Local Government Act (GRZ, 1991b). Informal settlements which are still illegal in accordance with the Town and Country Planning Act are recognised as polling districts under the two statutes that govern elections. *It is imperative that this paradox is corrected firstly through a policy pronouncement and thereafter legal amendments.*

- iii) The continued mushrooming of informal settlements should be stemmed if the problem of inadequate service delivery is to be eventually overcome. The local authorities are in most if not all instances discouraged from enforcing measures to stem this 'ever growing tide' due to unwillingness on the part of the political hierarchy to render the requisite political will and support as they fear to lose support from the voters residing in these areas. *There is need for a policy pronouncement underpinned with a resolute political will to enable local authorities carry out their mandate on illegal settlement development.* Accomplishment of this recommendation is tenable when the public are made to realise that actions by the local authority to stem this tide will be fully supported by government.

6.3.2 The Legal Framework

The following are recommendations on the existing legal framework.

- i) The inconsistency between the statutes that govern elections and land tenure should be corrected as argued in the section on 'policy framework'.
- ii) The RDCs who are regarded as the supreme CBO that oversees all developmental and service delivery issues in the settlement and also as a communication vehicle between the local authority and the community, have no legal recognition in the local government hierarchical structure. The findings overwhelmingly advocated for continued and stronger participation by the community through the RDC. *There is therefore need for a policy that provides for formal recognition of the RDC within the local government hierarchy and the subsequent enactment of legislation in support of the same.*

6.3.3 The Institutional Framework

The following statement is contained in Zambia's National Water Policy with regard to reforming the various institutions charged with responsibility for urban water provision⁴²:

⁴² Refer also to section 2.5.2

“to promote a sustainable water resources development with a view to facilitate an equitable provision of adequate quantity and quality of water for all competing groups of users at acceptable costs and ensuring security of supply under varying conditions. This entails establishing a well-defined institutional structure that will achieve the intended policy objectives” (GRZ, 1994).

The findings of this research clearly demonstrate that despite the fact that this policy proclamation was made close to 20 years ago, there is still a need for the continued development of appropriate institutional mechanisms that can serve to enhance service delivery in informal settlements such as the **‘quad array partnership model’** which is one of the key outputs of this research.

The following actions are recommended with regard to the existing institutional framework:

- i) Incorporation of the RDC as the lowest tier in the local government hierarchy for informal settlement service delivery.
- ii) The local authority needs to play a more enhanced role due to its having the mandate to control developments in informal settlements which have a profound bearing on the quality of water service delivery by utilities. *It is recommended that the local authority be incorporated in the service delivery institutional arrangement with a clear articulation of the role it is required to perform.*

6.3.4 The Regulatory Framework

It was also determined that the existing regulatory framework is not fully suited for ‘utility – small entrepreneur’ partnerships for service delivery. The following are recommended:

- i) Preparation of regulatory guidelines that can be used to specifically administer the proposed partnership arrangement between the utility and the private entrepreneur as it is a new phenomenon
- ii) Development of capacity within the regulatory agency to effectively monitor the proposed partnership arrangement

6.3.5 Incentives

The study indicated that if viability and sustainability of informal settlement water service are to be assured, there will be need to avail incentives to the providers by the government which will also act as a catalyst for service expansion and capital investment. Types of financial incentives may include:

- provision of operational grants that may be determined based on the overall turnover or the operational costs incurred to provide services to all informal settlements within a utility's area of jurisdiction;
- tax exemptions;
- provision of soft loans;

The non-financial incentives can include:

- usage of pro-poor tariffs which can increase gradually with service level improvement and increased viability of service provision to the informal settlements; and
- favourable regulatory provisions (which are pro – poor).

Provision of these incentives it should be noted is in government's interest since the incentives key role would be to help augment service delivery which is in conformity with government's overall quest to improve service provision in informal settlements.

6.3.6 Partnerships

The adoption of the “quad array public private partnership” for informal settlement water service delivery is recommended. The existing mechanisms where the utility plays a dominant role on one hand with inconsequential roles for the other players has proved not to be effective. The study has demonstrated that informal settlement service delivery requires a joint collaboration amongst all the relevant stakeholders directly or indirectly involved in the provision of services.

6.3.7 Cross Cutting Issues and Implications

This study focused solely on examining the management mechanism(s) that would substantially enhance water service delivery to informal settlements. It is essential however to outline the implications that improved service delivery would

bring to bear on the community. Adoption of the 'quad array partnership' can yield improved levels of access and general service delivery. However these gains would not yield the required benefits for the communities if similar interventions and efforts are not applied on other closely related service delivery arenas such as household sanitation, solid waste collection and drainage.

It is therefore recommended that policy makers and implementers adopt a holistic stance or a 'multi sector focus' when dealing with the problem of service delivery to informal settlements. This approach would not only be less costly to implement but would ultimately yield more lasting and effective outcomes. This new paradigm for informal settlement service delivery improvement requires a fundamental realignment of the existing policies that are concerned with living conditions in informal settlements.

6.4 Implications for Further Research

This study was focused on examining the existing modes of water service delivery in informal settlements of Zambia and to determine their level of effectiveness, viability and sustainability. The findings generated indicate that realignment is necessary in the institutional arrangement if service provision is to be substantially enhanced. This is in accordance with the New Public Management (NPM) paradigm that has emerged worldwide as,

"the optimal solution to widespread technical problems – i.e., it may be adopted to solve problems created by a lack of instrumental performance or by economic competition and market pressure. In this instance NPM reforms are adopted not because of their ideological hegemony but because, of their technical efficiency," (Christensen and Laegreid 2000: p.1).

There are many other service delivery arenas in nations worldwide that have ceased to fulfil their intended purpose primarily due to the ever changing socio-economic environment. These arenas do require systematic methodical probing to generate the desperately needed solutions which will result in an upliftment of people's living standards.

The following are recommended as areas for further research in other substantive areas arising out of the outputs of this study:

- i) The applicability of the 'quad array partnership model' to improve solid waste collection services in informal settlements;
- ii) Institutional mechanisms for sanitation management in informal settlements; and
- iii) Formulation and subsequent development of a formal theory derived from an analysis of existent substantive theories on informal settlement service delivery

The areas of research recommended arise out of the standpoint whereby the format and general character of partnerships for service delivery continually undergo change arising out of variations in the national socio-economic landscape.

6.5 Achievement of the Research Objectives

The principal aim of the study was to conduct an in-depth examination on the existing modes of water service delivery in informal settlements of Zambia and determine their level of effectiveness, viability and sustainability. The specific objectives were to:

- i) Determine and analyse the impacts of water service provision using public utilities (natural monopolies) to informal settlements in Zambia;
- ii) Ascertain which aspects of the existent policy, legal or institutional frameworks are deficient thereby adversely affecting informal area water service provision;
- iii) Establish as to whether the existing water service delivery mechanisms provide adequate incentives to the existent providers; and
- iv) Recommend potential alternative service delivery mechanisms that could address the existent deficiency in access to water supply.

The objectives were responded to as follows:

i) Objective One

The literature review indicated that the main impact of informal settlement water service provision by publicly owned utilities that have sole mandate (monopoly status) is that of inadequate supply. This was further confirmed from the field data where respondents were unanimous in stating that the service levels fell well below customer's expectations. Factors responsible for this shortfall were mainly:

- The service providers regarding service to these areas as financially non-viable (phenomenon two);
- An absence of financial incentives (phenomenon four).

The objective was achieved

ii) Objective Two

The findings indicated that there were several shortcomings in the existent policy, legal, institutional and regulatory frameworks (ref sections 6.3.1 to 6.3.4)

iii) Objective Three

There was a lack of incentives for the existent water service providers. These were required if the service delivery process is to become financially viable and sustainable (phenomenon four)

iv) Objective Four

The Quad Array Partnership service delivery model has been developed in this study for possible adoption (phenomenon five).

6.6 The Research Question Revisited

The principal question posed in this research was on why water service delivery to informal settlements in Zambia is not satisfactory in light of the many institutional reforms that have been effected and on how this anomaly could be corrected.

The reforms that were effected in the early 1990s did not pay particular attention or give special treatment to the service delivery challenge inherent in the informal

settlements where the major proportion of the service delivery deficiency is prevalent. The Quad-Array Partnership developed from this research stands out as an appropriate alternative mode of service delivery for Zambia's informal settlements that can effectively address the current service delivery deficiencies. This partnership mode brings to the fore the following:

- i) It is assured of ownership by the beneficiaries and the other stakeholders due to their participation. The high level ownership enhances the general acceptability by the beneficiaries and also makes the implementation process less cumbersome;
- ii) It addresses and also stems the challenges of associated with informal settlement development and growth as the local authority who are vested with planning and development authority participate as a full partner in the service delivery process; and
- iii) It enhances viability as the opted private partner is one who is "home grown" and possess a thorough understanding and appreciation of the service area which also eases operations.

6.7 Theoretical Propositions for Informal Settlement Water Supply

The grounded theory methodological approach through the constant comparative method enables the development of propositional theory that closely corresponds to the data analysed. Glaser and Strauss (1967) highlighted the two major requirements of theory as being:

- i) parsimony of variables and formulation; and
- ii) scope in the applicability of the theory to a wide range of situations while keeping a close correspondence of theory and data

They further argued that the constant comparison method can facilitate the generation of theories of process, sequence and change pertaining to organisations, positions and social interactions.

The theoretical propositions with regard to enhancement of informal settlement water supply in Zambia are stated thus:

- i) *Exclusivity in service delivery mandate to a water service provider whether public or private is not in itself a panacea for enhanced levels of delivery;*
- ii) *Informal settlements require specially formulated mechanisms that address the many varying inherent socioeconomic factors and incorporate all the key stakeholders for service delivery to be effective;*
- iii) *The four member 'quad array public private partnership arrangement' is a necessary imperative for enhanced water service provision to informal or unplanned settlements;*
- iv) *Viability and sustainability using public private partnerships for informal settlement water supply can only be tenable once appropriate financial incentives for the partners are instituted within the prevailing policy framework.*

The propositions stated are within the domain of substantive theory as the study was based on a single area of inquiry. Glaser and Strauss (1967: p.33; p.115) contend that the progression towards formal theory requires an additional analysis of the substantive theory which must include material from other studies with the same theoretical import (i.e. different kinds of substantive cases that fall within the formal area, without relating to any one substantive area). The scope and applicability of these propositions can be verified further through additional research in other service delivery arenas in need of efficiency enhancement and general institutional reinvigoration.

6.8 Generalisability

The research process employed a multi-case study approach as the principal units of analysis comprised two distinct informal settlements with distinct features both from within Zambia which was the overall case being studied. The rationale for this approach was that the findings from these distinct cases would be more compelling and generalisable as they are derived from cases that have differing characteristics which are prevalent in Zambia's informal settlements. These findings can also be extended to other Sub-Saharan countries with a similar socio-economic status and also having informal settlements of a generally similar layout and character.

6.9 Validity and Reliability

This study was pursued under the social constructionist paradigm, where reality is derived from people's experiences (both shared and singular) or their point of view on the phenomena under investigation. The methodology utilised enabled access to the experiences encountered by the various selected informants through the focus group discussions and semi-structured interviews. Gaining deeper insights into the research problem required close interaction with those to whom the inadequate level of service is currently provided on one hand and those responsible for providing the service on the other. The processing of the emergent data was undertaken using a coding process which is founded on completely breaking down the data into distinct units of meaning and reassembling it thereafter into cumulative categories or groupings that are closely linked in meaning through constant comparison.

The methodology employed therefore not only assured precision of data collected through direct access to the various identified actors but also through the analysis process which was unambiguous and highly transparent. It should be stated that some of the data was collected three to four years prior to the ultimate completion of this study. Time and resources inhibited the researcher from repeating the exercise. Despite this limitation, the current levels of access to informal settlements are still low today standing at about 50% according to NWSCO (2012) as compared to 40% at the commencement of this study, which assures the reliability and validity of the data as the problem of improved access is still prevalent.

6.10 Final Remarks

This study was undertaken using the grounded theory methodological approach. This methodological approach enabled me to continually 'interact' with the emergent findings as the analytical process developed. This rigorous but ultimately very fulfilling experience made it possible for me to extract new insights

from the phenomena under investigation. The outputs I believe can prove invaluable in solving the problems associated with informal settlement water service delivery. In addition, there is a wide scope for the findings to be generalised for other service delivery arenas requiring redress in informal settlements such as sanitation and solid waste disposal.

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APPENDICES

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Appendix 1: Area Profiles Kanyama and Linda

Kanyama

Kanyama is located on the western side of Lusaka. It lies on the western side of Soweto market along Los Angeles Road. It borders Chibolya compound and is divided into 30 zones. There is no proper layout of houses and roads. Roads and drains are in a poor condition. In Old Kanyama plots are small and houses are squeezed together whilst in New Kanyama houses and plots are much bigger. However, the area is densely populated and rocky. The area is also subject to seasonal flooding. The council plans to upgrade and develop the area. A large number of residential plots have been allocated by the ruling political party officials. A Residents' Development Committee (RDC) for Kanyama was established in 1996.

The main source of income for women in Kanyama is through temporary employment, shop keeping, renting out houses while some have no defined source of income. For men, their main source of income is through crafts, renting out houses, money lending while others have no defined source of income. As at 12th April, 2005 the population of Kanyama stood at 198,696 and there were 10,791 plots issued while the number of households stood at 46,212.

The main source of water is through yard piped connections, kiosks, hand pumps and hand dug wells. The "Kanyama Water Trust" supplies the old part of Kanyama whereas the New Kanyama is supplied by Lusaka Water and Sewerage Company (LWSC). Raw water comes from boreholes which were commissioned in 2002. Infrastructure is in poor condition and the area is supplied through individual connections and water kiosks equipped with two taps. There are also ablution blocks at the market which are run by the Market Advisory

Committee. Residents complain about the water supply situation and further argue that there are zones without any house connection. Furthermore, water supply is intermediate and sometimes erratic. People can fetch water in the morning and in the evening and pressure is very low. Congestion is a problem at kiosks and residents say that they also fetch water from leaking pipes. Residents say that the water quality from taps supplied by the Trust is fair while those who draw water from LWSC say it is poor. The wells are in poor condition and dry up in the dry season. Well owners charge K100 per 20 litre container if somebody wants to get water from their wells. The quality of water at the wells is considered to be poor and only a few households treat the water used for drinking and cooking (chlorination and boiling). Residents complain that the biggest problems they face as far as water supply is concerned are that not enough water is available, that the distance between the dwellings and water sources is too far, that the water quality is not good, that the price for water is too high, that people have to wait too long before they are able to fetch water and there are too many interruptions in supply (DTF, 2006).

Profile of Linda

Linda is a peri-urban area located south of Lusaka city centre. It is divided into eight sub-sections. There is no systematic layout of houses and roads which are currently in a very poor condition. Several houses have been constructed using unburnt (mud) blocks. The population is increasing due to high birth rates and new people coming to settle in the area. The Resident Development Committee for Linda was established in 1994. The major sources of income for Linda residents include shop keeping, agriculture, fishery, temporary employment and other sources. The population stood at 18,868 as at 19th January 2005, and the number of plots issued stood at 2,554 while total number of households stood at 2,650.

The main source of water for domestic use is through pipe connection, public tap, hand pump, yard well, stream, own connection and someone else's connection. Lusaka Water and Sewerage Company (LWSC) is the licensed service provider to render water supply services the area. Water supply in this area is highly erratic. The residents considered unemployment to be the major problem they face (DTF, 2006)

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Appendix 2: Focus Group Discussion Questionnaire

UNIVERSITY OF CAPE TOWN

DEPARTMENT OF CONSTRUCTION ECONOMICS

RESEARCH TOPIC:

**INSTITUTIONAL MECHANISMS FOR WATER SUPPLY TO
INFORMAL SETTLEMENTS IN ZAMBIA**

FOCUS GROUP DISCUSSION QUESTIONNAIRE

COMMUNITY NAME:

CATEGORY GROUP OF DISCUSSANTS:

MODERATOR:

NAMES OF DISCUSSANTS:

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....
- 6.....
- 7.....
- 8.....
- 9.....
- 10.....

SECTION A: EXISTING ENVIRONMENT FOR WATER SUPPLY

1. How severe is the problem in this community?
2. Is there anything being done by the authorities to improve the situation?
3. Who/which company is the major supplier of water to this community?
4. How effective is your major supplier of water in service delivery?
5. State the strengths and weaknesses of this company.
6. Have you ever heard of the concept of Public Private Partnerships in service delivery? (***Moderator to explain this concept and cite examples / Ensure discussants understand this concept fully.***)
7. Do you think that if this strategy was to be employed in water supply service would improve the current situation?
 - YES (Give Reasons)
 - NO (Give Reasons)
 - Give opinions as to what you feel would be the outcome regarding efficiency.
8. Are there other suppliers of water in this community? List them (if any) and state the strengths and weaknesses of each.

SECTION B: EXPECTED RISKS IN WATER SUPPLY PARTNERSHIPS

9. Despite being efficient, the private sector has a commercial motive (***Profit Motive***). Would members of this community welcome the Public Private Partnership strategy for water provision to their community?
 - YES (Give Reasons)
 - NO (Give Reasons)

Suggest what should be done for PPPs to be accepted by the community.

10. Give your opinions regarding the current state as well as adequacy of the Public Water Utilities infrastructure to support the Public Private Partnership Strategy.

11. State the risks which both Public Utilities as well as Private Companies would face if they were to partner in providing water to your community.

- Private Companies
- Public Utilities

SECTION C: PUBLIC PRIVATE PARTNERSHIPS AS A SOLUTION TO EXISTENT WATER SUPPLY PROBLEMS

12. State the areas the Public Private Partnership should address if was to be employed as water supply strategy in your community

13. Discuss anything you feel is vital for implementing the Partnership strategy effectively.

14. Discuss any other strategy you feel should be employed to improve water supply in your community.

END

Appendix 2: Focus Group Discussion Questionnaire

UNIVERSITY OF CAPE TOWN

DEPARTMENT OF CONSTRUCTION ECONOMICS

RESEARCH TOPIC:

**INSTITUTIONAL MECHANISMS FOR WATER SUPPLY TO
INFORMAL SETTLEMENTS IN ZAMBIA**

FOCUS GROUP DISCUSSION QUESTIONNAIRE

COMMUNITY NAME:

CATEGORY GROUP OF DISCUSSANTS:

MODERATOR:

NAMES OF DISCUSSANTS:

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....
- 6.....
- 7.....
- 8.....
- 9.....
- 10.....

SECTION A: EXISTING ENVIRONMENT FOR WATER SUPPLY

13. How severe is the problem in this community?
14. Is there anything being done by the authorities to improve the situation?
15. Who/which company is the major supplier of water to this community?
16. How effective is your major supplier of water in service delivery?
17. State the strengths and weaknesses of this company.
18. Have you ever heard of the concept of Public Private Partnerships in service delivery? (***Moderator to explain this concept and cite examples / Ensure discussants understand this concept fully.***)
19. Do you think that if this strategy was to be employed in water supply service would improve the current situation?
 - YES (Give Reasons)
 - NO (Give Reasons)
 - Give opinions as to what you feel would be the outcome regarding efficiency.
20. Are there other suppliers of water in this community? List them (if any) and state the strengths and weaknesses of each.

SECTION B: EXPECTED RISKS IN WATER SUPPLY PARTNERSHIPS

21. Despite being efficient, the private sector has a commercial motive (***Profit Motive***). Would members of this community welcome the Public Private Partnership strategy for water provision to their community?
 - YES (Give Reasons)
 - NO (Give Reasons)

Suggest what should be done for PPPs to be accepted by the community.

22. Give your opinions regarding the current state as well as adequacy of the Public Water Utilities infrastructure to support the Public Private Partnership Strategy.

23. State the risks which both Public Utilities as well as Private Companies would face if they were to partner in providing water to your community.

- Private Companies
- Public Utilities

SECTION C: PUBLIC PRIVATE PARTNERSHIPS AS A SOLUTION TO EXISTENT WATER SUPPLY PROBLEMS

24. State the areas the Public Private Partnership should address if was to be employed as water supply strategy in your community

15. Discuss anything you feel is vital for implementing the Partnership strategy effectively.

16. Discuss any other strategy you feel should be employed to improve water supply in your community.

END

Appendix 3: Focus Group Discussion Answer Booklet

UNIVERSITY OF CAPE TOWN

DEPARTMENT OF CONSTRUCTION ECONOMICS

RESEARCH TOPIC:

**INSTITUTIONAL MECHANISMS FOR WATER SUPPLY TO
INFORMAL SETTLEMENTS IN ZAMBIA**

FOCUS GROUP ANSWER BOOKLET

COMMUNITY NAME:

GROUP OF DISCUSSANTS:

MODERATOR:

NAMES OF DISCUSSANTS:

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INSTRUCTIONS: Record All responses in point form

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Q.13.....
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Q.14.....
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Appendix 4: The Semi-Structured Interview Guide No 1

UNIVERSITY OF CAPE TOWN

DEPARTMENT OF CONSTRUCTION ECONOMICS

RESEARCH TOPIC:

INSTITUTIONAL MECHANISMS FOR WATER SUPPLY TO INFORMAL SETTLEMENTS IN ZAMBIA

Name of Key Informant:

Interview Date:

Specific Area of Informant's Specialisation:

Questions

1. What are your views on current access levels to water supplies in informal settlements of Zambia? Is the level of service adequate and satisfactory?
2. What levels of effort are currently being applied by the mandated providers to redress the service level shortfalls (if they so exist!)? Are they adequate, if not why?
3. Do you believe water service provision to informal settlements is commercially viable for publicly owned utilities? If so what strategies should then be employed to enhance viability?
4. In what ways does the viability of informal area settlement water service provision impact the mandated provider's ability to effectively operate the network infrastructure? Indicate the areas of impact if any.
5. Which alternative mechanisms (styles!) do you think can be applied to substantially enhance water service provision to informal areas? (Informant to elaborate in detail where possible)
6. What are your views on participation by the private sector in informal area service provision? (Informant to elaborate on type of preferred partnership

and give reasons why it is preferred and what previous experiences influence their standpoint)

7. Do you foresee any potential risks if the private sector was to participate?
8. What role should the beneficiary community assume in the service delivery arrangement?
9. What key aspects should a transaction involving the private sector contain?
10. Any other issues

Thank you

University of Cape Town

INTERVIEW TRANSCRIPT No 1

Date: 3rd October, 2011
Time of Interview: 16hrs
Location: Kafubu Water and Sewerage Company Corporate Head Office, Ndola, Zambia
Interviewee ID: MKC
Position: Director of Planning and Development
Experience: 28 years

IB: What is your view on the current level of service to informal settlements in Zambia is it adequate or satisfactory?

MKC: *We can put it on the satisfactory level, adequate we are yet to reach yet to reach that adequacy*

IB: Why do you say it is satisfactory why is it not adequate?

MKC: *...It is inadequate because.... when the areas were planned, initially the settlements were smaller now those settlements have expanded and those expanded areas haven't been able to access the commodity.*

IB: Why do you think they have not accessed?

MKC: *They haven't accessed mostly because of inability to draw sufficient amount of water from the sources, the sources haven't been adequately equipped.*

IB: Would you say it is an infrastructure inadequacy?

MKC: *Yes, and that is the most important issue which is hampering the ...effective sustenance of physical allocation of water to most areas its because of the infrastructure which is run down and until that is done in most areas of the country then that's when we will reach that point of adequacy to a number of people.*

IB: Why don't we put in the infrastructure, what is inhibiting the authorities from placing the infrastructure?

MKC: ...Mostly its resource, resource that could also be attained if it is well planned for, so it is both ways the planners inadequacy...in fact the main thing is planning because if the planners are there, whatever resources are there could be divided or be allocated to suit at least to suit the expansion to those areas that are being expanded.

IB:What do you think or what do you say are the current levels of efforts that are being applied by mandated providers, when I talk about mandated providers am looking at utilities like Kafubu Water, Lusaka Water. What levels of efforts are being applied by these mandated providers to redress the service levels short falls, during your first response you indicated that its inadequate service level. So what kind of effort is being applied to resolve this problem by mandated providers?

MKC: ...sometimes it will be very difficult to just generalize all the companies but if I can centre for Kafubu Water and Sewerage Company because of the dilapidated infrastructure, this company has got a planning department which I have been privileged to head, and within the 3 years that we have been in, we have been able to contact certain institutions, through the Government, we have got the Government to help us and the Government has come forward and we have identified certain sources of finance which is going to help us to rehabilitate the infrastructure and we have got two major ones which I think when those are done, our area of operation will be adequatelybe able to supply or to provide the necessary service.

IB: So you are saying that there is infrastructure deficiency and this infrastructure requires resources so utilities are looking for resources to address this problem?

MKC: Exactly.

IB: Ok fine, fine.....Do you believe that the current levels of water services provision to informal settlements is commercially viable for public utilities, is it a

viable proposition, the current way in which water is provided to these informal settlements is it commercially viable, is it sustainable?

MKC: No! It is very, very difficult at the moment because 1. The way the infrastructure itself, the houses the way they are set, it's very difficult to aggregate them to suit the commercial requirement because they are scattered in a way, and for some lines passes through certain yards for water to reach them, so to account for that amount of water its very, very difficult, so really it's very difficult to rely on those settlements for commercial basis or commercial aspect.

IB: So are you saying that the current mode of service provision does not give back the return.....does not yield back the return for the provider?

MKC: It is there on the tariff but it is very minimal and or to just use the word negligible.

IB: So how can you make it significant if you are saying it's negligible, how can you make it noticeable, how can there be significant level of return?

MKC: ...First of all the network to those infrastructures will have to be rearranged then from there certain aspects of commercial aspects also need to be rearranged. Yes there is what we call the Kiosk kind of business whereby at least there is a meter for a number of people one single bulk meter which brings water there but when we collect the resource from all these areas compared to the volume that goes through that bulk meter we find that actually what goes in the meter is most what the people pay so it becomes very challenging it becomes very very difficult to adequately do that but we have got to rearrange the infrastructure and of course we have also to look into the cost, but that cost education also has to be enhanced in those areas so that people can appreciate the importance of the service.

IB: What impact does this have on the service provider if the service provider is not getting return, what behavioural impact do you end up noticing in the service provider if they are not getting this appreciable level of return, if it's not viable?

MKC: It becomes difficult that is where the issues of non-revenue water keep on rising, it cannot reduce extensively because a certain portion which is also very huge, it's quite an amount of area or populace which receives that kind of water and that is a heavy negative contribution to the non-revenue water and when none revenue water is high the company definitely has got a high figure of loss, what they collect is far off than what is expected.

IB: So would you say they get discouraged, do they give due attention to these areas or because of this they start to neglect these areas?

MKC: To be very frank, the care that is there it is just for provision.....not to gain but for the sake of a living just to make sure that they have some water they have got to be provided with commodity, they cannot stay without water, so it is something may be which the Government has got to help to see on how that can be paid back indirectly in one way or the other.

IB: What other methods...ok you are looking at current methods and you are saying these are weak because they are not giving return to the service provider, can you suggest other methods or staff that can be used to enhance water service provision to informal settlement if at all you have any ideas?

MKC:Its a bit challenging, I think apart from what I said first of all we have got to improve the network to those areas and the areas we need to be sure when a settlement is set it has got to be that particular population but what is happening nowadays especially in this country is that in a certain area where they thought only fifty households will be there within a year or two they find that there are already over two hundred and its difficult to manage extra service for an extra one fifty households, so its quiet a challenge, its really a challenge, I think a lot of heads needs to come together in order to overcome this issue.

IB: I see. There is this aspect these utilities are publicly owned entities, do you think the private sector can play a role in improving service provision in informal settlements?

MKC: Its.. for now like in this country it's a bit....but it can start...from what we have started, from the kiosk kind of provision of water, because in that way they pay per bucket, there, there could be certain one or two ways which am sure can be enhanced in order for collection to improve, but of course with an improved service delivery in those areas.

IB: So are you saying that the private sector can play a role?

MKC: Yes they can play a role.

IB: A positive role or a negative role?

MKC: It is medium, its medium, it cannot be very high because definitely the private sector wouldn't gain much from those areas.

IB: I see. So that is a potential risk, if the private sector was to participate they wont gain much, so, what other risks you think can emanate because of the private sector, if they were fully involved?

MKC: If they are fully involved, it can result in resentment of the populace to the ruling government at that particular time because they will fail to cope with the tariff which the private sector would want, the price of the commodity would be higher than what they can afford and that can bring resentment in the society.

IB: What about the beneficiary community, the community that is receiving the service, do you think they can have a role in participating in this service delivery arrangement?

MKC: Yes they can.....in the....by ensuring that they are caring for the infrastructure, they minimize the vandalism and they encourage the community themselves there, they will organize themselves so that they show themselves the importance of that community so that they don't expect it to be free, that must understand that that water that goes to those areas is paid for it comes at an expense, there is electricity which is paid for, there chemicals which are paid for, there are employees who are paid for, so all that has got to be returned in one way or the other.

IB: Look, am coming to my last question, like if the private sector was to participate, am getting back to that point, what aspects do you think should be

included in the contractual agreement between the public utility and the private sector if they were to get involved, what aspect would you insist should be contained in such an agreement?

MKC:One I think if they are to get involved.....assurance of the commodity that the service has got to improve, because immediately they would lack provision of a proper service, there will be rebellion from the public, they will not be happy and they would not even like that private participant to be involved.....in addition to that the private partner don't have to go directly to the public, I think they public they know the utility, so they have to come through the utility, they have got just to be understood on the side bay then later on slowly that's how can be identified. If they go in directly I don't think they will be able to succeed on their own.

IB: Are there any other issues that you would like to elaborate.....?

MKC: No for now, I wish I had gone through your questionnaire much earlier; I could have given you more answers.

IB: Mr MKC thank you very much, I really am grateful for your participation in this interview. Thank you very much.

INTERVIEW TRANSCRIPT No 2

Date: 4th October, 2011
Time of Interview: 16hrs
Location: Kafubu Water and Sewerage Company Corporate Head Office, Ndola, Zambia
Interviewee ID: TNO
Position: Director of Commercial Services
Experience: 24 years

IB: What are your views on the current access levels to water supply in informal settlements of Zambia...do you think the current level of service is adequate or is it satisfactory or what?...What are your views?

TNO:I feel that the supply...to the informal settlers is inadequate, but its satisfactory in the sense that we have made efforts andwe've made strives to....supply water to these informal sectors...but as you know the informal sector arrangement is different from these formal sectors, they have other sources of water supply like shallow wells, I feel that its not adequate but satisfactory.

IB: Now you are saying that it's not adequatesupply to these settlements, you are saying it's inadequate. Now.....you are working for a utility company so what efforts are these utilities, your own utility any other utility making to redress the service level shortfalls because you are saying it is inadequate but satisfactory, am I correct?

TNO: Yes.

IB: Sothat means there is a shortfall so are the utilities doing to improve this?

TNO:A lot of programs have been put in place.....for Kafubu in particular....we have devised certainmethods of delivering water to the informal sectors, one of the popular methods we use is the Kiosk type of

arrangement where we supply water and sell from a shop called Kiosk, people go there with containers and they pay K50, 000.00 per 20 litres. The other method we use is the stand taps, communal taps where we appoint a Tap Leader, and we sell water as people come to draw, but these methods are still inadequate but they are satisfactory in the sense that we are able to at least meet part of their needs.

IB: Would you say that this provision, or this mechanism you are using currently, is it viable for utilities....utilities gain.....do utilities regard it as something that is viable or.....what do you say?

TNO: Basically the general principle is cost sharing basis, its not viable per say but we have a mandate to provide the service to the people and as such we want the people also to feel part of the system and we encourage them on costsharing basis.

IB: So if there was no mandate would you be encouraged to go to these areas, sincerely speaking?

TNO: ...No, No, No! We wouldn't, but on moral grounds.....we can supply, but from financial viability, its not.

IB: Is it a very small proportion of your turn over.....would you say supply is..?

TNO: It's a very, very small proportion of the turn over.

IB: Percentage wise, how would you put it let's say for Kafubu Water and Sewerage Company?

TNO: About 6%.

IB: 6% of your turn over?

TNO: Yes

IB: So you would feel that it's not viable?

TNO: It's not viable at all.

IB: The effort that you provide?

TNO: Yes

IB: Now if you wanted to enhance viability, what do you think are the strategies that you would recommend to enhance viability because you are saying its not viable?

TNO: ...Its not viable at the moment.... what I would suggest ismay be....customer participation or community participation where bywe can sell water not to individuals but to an agent in bulk and then he sells to various individuals, in that way, we are able to reduce our cost and also we are able to share the cost with the agent themselves.

IB: Right.....Now....again coming to the issue of viability, in what way does the viability of the informal areas settlement water service provision impact the mandated providers ability to effectively operate the network infrastructure?

TNO: Basically, these are growth areas and two.....its not only the poor people staying in these informal sectors, now we have seen people from the middle class staying in these areas, so what I would recommend is individual connections for those people who can afford individual connections and are able to use more water, we give them individual connections and as such they can contribute more to the financial aspect of the company.

IB: You are saying that way would there be like a cross subsidy within the settlement.....and make it more viable?

TNO: Yes, those who can afford can subsidize those who cannot; there are certain people who are just getting water specifically for the basic needs.

IB: I see..... are there any alternative mechanism do you think can be applied to substantially enhance water service provision to informal areas, do you think there any of such mechanisms that can be used apart from the one you have suggested of participating with agents?

TNO: The other.....alternative I would suggest is to have mini plants, where by you can drill just a borehole...and then supply the water because the cost of delivering water from water sources to the informal sector is quite huge and if we can have like mini processing plants where we can sink a borehole, put a tank and sell, I think that way it will reduce cost.

IB: And who should operate that mini plant?

TNO: The mini plant can be operated by the....community themselves where you....put such a facility.

IB: And would be the role of the utility?

TNO: The role of the utility is tosee to it that certain standards are met, the hygienic standard are met and also....the quality of the water supplied to the.....community ...meets the Kafubu standards.

IB: So you still advocate that there are some partnership arrangements?

TNO: There should be some partnership arrangement, yes.

IB: Alright.....Now this partnership....would it be private sector or let's say community based organisation, what do you say about that?

TNO: Private sector partnership would work very well, but of course we need community participation as well.

IB: And the community through the community based organisation?

TNO: Yes, yes.

IB: I see.....so you want....are you advocating for a mix.

TNO: Yes.

IB: The community based organisation and a private agent and then the utility on the other hand?

TNO: Yes, that is what I suggest.

IB: Do you foresee any potential risks if the private sector was to participate?

TNO: Yes, the potential risk is that the private partner would like returns immediately where as these places need a lot of time for you to start breaking even and even making profits, we would see a situation where you partner with somebody and they withdraw....their participation because you are unable to break even.

IB: What about....informal settlements, there may be densely populated as compared to.....would the dynamics be different?

TNO: It would be because of the numbers..... what that means is that the turn over on the sales would be slightly higher than those which are not densely populated.

IB: So you think that it will be an influencing factor?

TNO: Yes it is.

IB: So in the less densely populated areas the return would take very long time to realise?

TNO: Yes.

IB: I see! Now a transaction involving a private sector and the utility, what key aspects do you think should be included in this transaction on this.....partnership?

TNO: I think the most important thing should be some service level guarantees...there should be clear memorandum of understanding, service level guarantees, as a utility as the mandated provider of the service if there are certain benchmarks you need to meet and even just people who join in as partners or people participation in the provision of the service they must be able to know what we intend to achieve.

IB: I see.....are there any other issues Mr Kayanda that you would like to add to this whole aspect of informal area water provision?

TNO: Yes Sir, ...what I believe is that for any program to succeed, there must be community participation, it would be better as you are planning to take a service to the people, you must involve the people starting from the planning stage up to the implementation stage, as such....you find your projects will more successful than just implementing a product on the people and tell them to buy that service, but if you involve them from the planning stage up to the implementation stage, I see a situation where all the...programs will be successful.

IB: Why would they be successful if you involve them?

TNO: Because the people feel they are part of that program and also they feel ownership of that project itself.

IB: And is this only for informal settlements or even for formal settlements?

TNO: Even for formal settlements it can still....., the only difference is that the formal settlement is they read, they understand and as such even dissemination of information is different, you can disseminate through public media but where as these people who are in the informal settlement, most of them they are illiterate, you need to use community leaders, talk to

them and also the method you can disseminate this information is quite different.

IB: Mr TNO, I am grateful, thank you very much for participating in this interview.

University of Cape Town

INTERVIEW TRANSCRIPT No 3

Date: 5th October, 2011
Time of Interview: 15hrs
Location: Nkana Water and Sewerage Company Corporate Head Office, Kitwe, Zambia
Interviewee ID: RON
Position: Director of Operations
Experience: 18 years

IB: Now Mr RON, I would like you to indicate to me what your views are on the current accessed levels by communities to water supply in informal settlements of Zambia, I would like you to elaborate whether the current level service is adequate or inadequate or satisfactory.

RON:the current levels of service are inadequate,that is to say that...the households have to walk long distances to the water points that have been created and about a thousand households would come to one water point and have to make long queues....it is not adequate in the sense also that they have to transport small amounts of water from the water point to their homes and therefore its not very convenient for these poor communities to move the water over long distances.

IB: When you say poor communities, are you indicating that these areas have got a vast majority of poor people or rich people, why are you saying poor communities because we are talking about informal settlement, are you saying that poverty is the key characteristics of these areas?

RON: These settlements they accommodate largely people in the low income groups...and some of them do not have an income at all, and those that do have an income probably it is not is not guaranteed income, it doesn't come at once as a salary, they get this money in little bits over a

period of time throughout the month, so in many ways one can state that these settlements are poverty stricken.

IB: Now having indicated that the level of service is inadequate or unsatisfactory,... what kind of efforts are being applied by mandated providers such as yourselves, Nkana Water and Sewerage Company to redress the service level shortfalls because you are saying its inadequate and you are a mandated provider, so what are you doing to redress this problem?

RON:We had a privilege of getting donor funding to build infrastructure in these areas....and one would say that the water utility has scored a plus in creating the infrastructure so that people can have access to water, however, it is inadequate in regard to the number of Kiosks that are available at the moment and beyond that one also wants to cast an eye at the maintenance of the infrastructure....the maintenance of the infrastructure goes at great cost compared to the revenue that come out of there. The water utility has provided quite a sacrifice to provide water supply to these areas.

IB: Ok, I note in your answer you have indicated that first and foremost, you got donor funds now you are a mandated provider, does it mean that you as a utility do not have the necessary, the required funds of your own to attend to this problem?

RON: As a utility we do not have the required funds, we are struggling with the informal settlement to bring the service up to the required standards but we cannot cast a blind eye to the peri-urban areas that are in the peripheral because when disease outbreaks occur, it will not choose to remain in the informal settlements if the service is not adequately provided and therefore the company stretches beyond its mandate of providing the service within the urban areas to cater for the peri-urban areas with the little resources that are available.

IB: Now, in terms of priority, would you say formal settlements have got a higher priority than informal settlements?

RON:The formal settlements have an equal priority as what one would regard the informal settlements because human beings live in those areas and one cannot prize the value of life and therefore...each of these settlements require to be given the service so that human life can be prospered as it were, however, in regard to the answer one would want to go further and say what kind of business sense does it make to provide a service in an informal settlement as compared to a formal settlement if one calculates the figures and weighs the bins one really finds it makes more sense to provide the service in a formal settlement than in an informal settlement and therefore if a strict business was to be provided one would go for a formal settlement and avoid an informal settlement.

IB: So would you say that provision to informal settlement is commercially not viable, is it a non-viable proposition for publicly owned utilities?

RON: It is not commercially viable to run a business in an informal settlement.

IB: So what strategies then should be employed to enhance viability, we are saying viability is low, but what can we do to enhance viability if there are any strategies that we can employ?

RON: One of the things that cause the cost to be as high as it is, is the vendors that run the Kiosks and one way of keeping the vendors in the kiosksbecause when one looks at it, the water sales in regard to revenues are very low and cannot support the livelihood of the vendors and therefore one strategy that has been put in place is to ensure that the kiosks are big enough so that the vendors can sell other than water other merchandise so that the revenues can have an impact on sustaining their livelihood....there could be a way that could be provided rather than the water sells going to the vendors to be paid as salaries or wages, the kiosks should be big enough with enough merchandise so that they can solely be provided for from the sales from the merchandise and the revenue from the water can be used by the community in conjunction with the utility to

maintain the infrastructure rather than paying out that money that comes on a daily basis from the kiosks to the vendors salary or wages.

IB: These vendors, are they full time employees of the utility?

RON: They are not full time employees, they are on contracts and these contracts are....they come through the Residents Development committees who....are useful in sensitising the communities, so the resident development committees are able to identify the best suitable persons that can be in the kiosks and through that partnership the vendors are able to sell the water.

IB: So this is like a partnership arrangement, isn't it, we've seen the public utility, the community based organisation and the RDCs.

RON: Yes indeed it is.

IB: Alright...now apart from this mechanism, do you think there are any other alternative mechanisms that could be employed to improve this service levels in the informal settlements?

RON:We have already looked at the issue of funding and the utilities are not able to stretch their current revenues from the formal settlements to the informal settlements and therefore the Government through taxation can consider giving grants on a continuous basis so that more kiosks can be built and the infrastructures can be improved further and the maintenance aspect can also be financed through grants and in addition to that there is a lot of sensitisation that is required to create a sense of responsibility to avoid vandalism and also to draw people to get water from the kiosks so that once these kiosks are present in the communities... as many people as possible use them.

IB: Would you say that when you talk about grants, you are talking or espousing the issue of subsidies, right, because grants if they are coming from Government, its strict to subsidize the service to these areas, now within your own utility wouldn't you have like cross subsidization mechanism where by the formal settlement where you claim more viable proposition can subsidize the informal settlements within the same service area?

RON: *Well the argument here is that at the level of service provision that the water utilities are, all revenues are required as much as possible to improve the water infrastructure because it has outlived its life span and therefore, we need to find money beyond the revenues even by cross subsidy within the sector are outside by means of subsidies and grants from the Government and here we are looking at revenues from the food industry for example, revenues countrywide that can assist in providing financing towards the infrastructure in the peri-urban.*

IB: you brought this issueabout.... its like a partnership between the public utility and the community based organisation and also the vendor, its like a partnership arrangement, this is what in your previous remark you have advocated for, now.....am I correct in saying that you are advocating for like a partnership arrangement between the public utility and the community based organisation and also the vendor as an effective mechanism or means of providing the service in the informal settlements?

RON: *At the level where we are, I think it is, because it provides a mechanism where by sensitisation can be provided through a leadership that is already recognized and therefore you are using structures that the people themselves have selected instead of imposing a new supper structure that would require a lot of sensitisation for that leadership itself to be accepted, so its a good partnership for the RDCs to be part of the arrangement and indeed it also provides -----because if you are dealing with an individual vendor and that vendor one day decides not to operate, then the social structures are not available to find another vendor to quickly replace that vendor then it becomes very difficulty to have smooth operation in the peri-urban areas.*

IB: Do you foresee any risks at the private sector like in this case the vendor because that is a private entity. Would they have any risks in this partnership, do you..., can you elaborate any risks if at all any?

RON:In this regard you mean..

IB: ..this partnership...., public utility, the community based organisation and the vendor, the vendor actually is a private entity, right, they are not public, they are a private entity, now what risks do you think may accrue to them in this particular partnership if at all any from a business point of view?

RON: Well from the utility side the risk of losing money that is collected on a daily basis is present but that is hedged against by having the RDCs in place so that if there are any shortages it can be made up for by the group, on the other hand, there is a social risk by the vendors who sit in the stores (kiosks) and if they don't have any other merchandise to sell, then they will not have a livelihood at the end of the day they will not be able to look after their families so that risk is hedged against by having merchandise in the stores that the vendors can sell in addition to the water. The other social risks that would arise if people are not properly sensitised then they would be hostile to the people that have been put in the kiosks and injury if that hostility became physical.

IB: Thank you.....There are transactions that involve a vendor and the community based organisation being the RDC and the utility, so should there be any clauses there to protect against or to circumvent these potential risks do you think there are any aspects that should be contained in the agreement.

RON: ...I think agreements should be as watertight as possible so that it shows the responsibilities and rights of the three parties involved that is the water utility, the vendor and the RDCs and enough education campaign should be mounted before the project is embarked on so that each of the parties know their rights and responsibilities of paramount importance the day to day running of the kiosks should be properly defined so that there is no interference from the RDCs for example they should give the vendors to operate freely so that they can realize revenues and the books should be open to all so that the transactions can be properly examined and the bills for each party can be made available at the end of the month.

IB: Any other issues that you would like to add on and in conclusion.

RON:I think that there is a lot that this could be done in regard to the informal settlements, there is need for the local authorities to ensure that we do not have a proliferation for the informal settlements are going forward into the future so that we do not have the difficulties that we are currently having in providing infrastructure to settlements that have not been planned for whereby we do not have roads and houses are being built in a up hazard manner and its very difficulty to run the pipe work, so a partnership between the water utilities and the local authorities is paramount to stop any further increase in the informal settlements.

University of Cape Town

INTERVIEW TRANSCRIPT No 4

Date: 5th October, 2011
Time of Interview: 16hrs
Location: Nkana Water and Sewerage Company Corporate Head Office, Kitwe, Zambia
Interviewee ID: GAN
Position: Managing Director
Experience: 13 years

IB: What are your views on the current access levels of water supply to the informal settlements in Zambia is it adequate or inadequate.

GAN: Thank you very much.....In terms of the service that we are actually giving to our informal settlements now I must say it is not adequate, I say so because we have quite huge population in our peri-urban areas which are the informal settlements in the areas that we serve and we are only able to provide the service in terms of water through some central point kiosks which cover quite a number of households in some cases about 1000 households are to be able to access this water through kiosks. So yes we are providing some service but the service is not adequate.

IB: Now if the service is not adequate, what kind of effort is being applied by mandated providers, I mean public utilities to redress service level shortfalls?

GAN:As a water utility, service provider, we are making every effort to see that we improve this access, in our various areas that we serve we have been increasing on the number of water points, from time to time, through financing obtained through government, through some cooperating partners with Government that provide financing to the peri-urban areas, we have been able to build kiosks, improve on these kiosks, some times we have actually even improved on the quality of the type of kiosks that we are able to use to provide water. In one of our townships, we

were using a very simple type of kiosk where the vendor could only sell water from these kiosks, we obtained financing to improve on the type of kiosks that we were using so that the vendors are also able to sell other commodities using these kiosks, so yes we are in discussion and we are ...discussing with various financing partners to see to it that we improve the access points in these peri-urban areas.

IB: But you are getting grants financing for this, why don't you use your own resources, are you saying that you don't have your own resources to attend to this expansion programs.

GAN: In these areas we are not able to in simple terms I would say, we are not able to make money....service to the peri-urban is what I can say already subsidized because the cost of providing the service is much higher than the income we get from these areas. When we look at other areas that we serve, these are other areas that are helping us run, be able to run the company and provide the service even to some extent subsidizing the low income areas. But even us utilities, we are not able to make enough money to be able to sustain these operations, we are actually on the road to ensuring that we at least are able to cover our costs so as a result there is no excess income that could be used to actually provide or extend service to these peri-urban areas.

IB: So in essence what you are saying is provision to these areas is not commercially viable?

GAN: Yes I agree with you...., provision of service to these areas is not viable, it is not viable because the cost of providing this service is much higher and then we are providing water through these central points where in some cases we find that the revenues coming from these central points is inadequate because very few people actually buy this water and then we find that in low income areas they actually do not use that much water probably because of the burden of actually moving from their homes to collect water from these points we find that the actual consumption is much lower than in these other areas so the income is actually much, much

less than what we actually spend in these areas, so to actually provide a service there is not commercially viable.

IB: Are there any other strategies that you think can be implored to enhance viability?

GAN:In these areas really currently the set up that is there is to partner with the Resident Development Committees (RDCs) , these arewhat I can call community based organizations in these low income peri-urban areas and then through those we are able to appoint vendors who run these kiosks more like small businesses and then these vendors are paid some kind of commission to be able to run this service to sell this water, so the commission that is paid to them is coming from the income they make. So that contributes to a higher cost for us to be able to make money in these areas, so really what I do think is we need to look at the whole partnership arrangement and see how we could be able to reduce on the amount that is actually paid to these institutions, to these vendors rather, so that we are able to have some big amount remaining to be able to pay to the utility. One way is to see how these vendors could benefit more from the mini groceries that they turn the kiosk into and see how they could benefit from that. Another way is to look at the whole partnership arrangement and see how we could improve on that to give the vendors much more to do or much more lee way so that they do some of the small small maintenance that is required and then we do look at the major aspect, that way I think it could improve the operation of these kiosks.

IB:, in what ways does the viability of informal settlement service provision impact the mandated providers ability to effectively operate the network infrastructure, you have got the network infrastructure and now since you are saying its not viable, how does that impact the effectiveness of operating the network?

GAN: As a utility I must say that we have this mandate to provide water to all our customers both in the high income, low income as well as the peri-urban areas and we therefore have to ensure that we extract this water,

ensure we maintain the infrastructure with which this water has to be delivered to our customers. I must say that we are not able to do all the maintenance that we are supposed to do basically because this inadequate income coming from our customers to be able to carry out a comprehensive maintenance that we are supposed to carry out, because we are really trying to ensure we achieve our mandate to provide water-----
- at some, in some cases we have tried to stretch ourselves to be achieve this.

IB:, do you think there are any alternative mechanisms that can be employed to substantially enhance service provision to informal areas, that is apart from this vendor....community based organisation , utility arrangement, are there any other mechanisms that you think can be employed?

GAN: There are various mechanisms that could be considered and employed but I think it does matter what kind of set up would really work for a certain community or for certain utility, for example and Nkana Water and Sewerage Company we have found that the kiosk system that we are using working with the RDCs and the vendors has worked very well with us and we have managed to extend our service to various areas. There are other kind of set ups that we know about such as we use pump private operators to run these schemes, but that is something that has not been tried in our area.

IB: What do you mean private operators, you mean.. isn't a vendor a private operator?

GAN: *Oh, may be its quite slightly different arrangement where you provide water up to a certain point, put in the meter and this private operator runs the whole scheme within a whole township, they actually engage their own people, they actually do all the maintenance, they do everything, they collect revenue and what you have is just a point where you are paid just for the water that goes into that community. Now that is something I must say has not been tried and I think it is an issue that needs to....unless we could be able to do a dialogue because I have seen that it*

depends on the type of communities you are dealing with and so far I must say what has work for us is the current system where we are actually in charge of the water right up to the kiosk.

IB: So what you are saying is that the current arrangement has got a very strong subsidy input, that's why you....take it up to the vendor and not to allow a person operate the whole area, isn't it.

GAN: Exactly.

IB:, I would like you just also to indicate if the private sector was to participate and we have talked about.....or as a private sector participates, what potential risks are there and in this case we are talking about a vendor. I mean the current arrangement that you have, they are a private entity, now what risks are there in this arrangement for them?

GAN: Thank you so much, what we see sometimes as a risk is we find... sometimes there is low number of customer turn out at these kiosks some of these customer still believe in drinking water from shallow wells and they are supposed to really be educated to ensure that they go to the kiosks and draw water so in some areas there is low turn out of these customers and as a result we find that the vendors may not really be interested to continue running the kiosks. So that is one risk basically because the income is lower in that area. Sometimes also you find that these organisations, the local organisations that we use in the community organisations such as RDCs also sometimes have a high turn over and we get few people coming in but sometimes, we may not be very conversant with the way the system works and that also affect the kind of business that is given and provide service to these vendors.

IB: Do you use any strategic roles that the beneficiary community should assume in this arrangement?

GAN:The beneficiary community in this case especially the local community organisations we are using I think we really rely on them so much in sensitising the communities that they are serving. As I said earlier, we still have various communities where people in that community

still believe in drinking water from shallow wells and not water from the kiosks and they need to be sensitised on the need for them to drink clean water that could be able help alleviate disease in these townships, so we really rely on these communities to be to assist us with that sensitisation, and they also interact these communities and able to know the best ways to reach out these communities in terms of issues of hygiene, water and sanitation requirements, so these we do rely on these communities to assist us in this regard .

IB: So what you are saying that it's really found that this service delivery arrangement is really founded on the principle for a partnership arrangement is that what you are saying?

GAN: *Yes it is, because what we realise that that our level as utility it is not very easy for us to get to what really is the best way to give these communities a service, there are times actually when we have put up kiosks and without consulting the communities themselves and community leaders, we find that these kiosks are never used, but issues of siting the kiosks, issues of where they think it would best be and best assist the community are well articulated by the communities themselves and the community leaders. So without partnership with the local organisations in these townships and these peri-urban areas it is very challenging for utilities to move in be able to successfully provide the service.*

IB:, are there any other issues you would like to add on to this whole issue of service delivery to informal settlements?

GAN: *I must say service delivery to informal settlements is a challenge for water utility, we are mandated to provided water and sewerage to all customers in our service areas and if one had a way, they would say well may be this areas should be cut out or should not be provided with the service but we do realise the need for these customers to be provided with a proper service, otherwise if there is a problem there, an outbreak would spread to all our service areas, so we do realise that it is very important for us to provide a service but at the moment I must say its not viable to*

provide a service to these low income areas and what we do need really is a coordinated development going forward because it will make our provision of service easier to be able to reach out to our customers, so mushrooming of....continued mushrooming of these peri-urban settlements it does pose a challenge and there is need for Government to put in deliberate effort and mechanisms in providing financing so that we are able to extend service to these areas and serve all the customers.

University of Cape Town

INTERVIEW TRANSCRIPT No 5

Date: 17th October, 2011
Time of Interview: 16hrs
Location: Kafubu Water and Sewerage Company Corporate Head Office, Ndola, Zambia
Interviewee ID: TUM
Position: Head Peri Urban Unit
Experience: 13 years

IB: Good afternoon Mr TUM

TUM: Good afternoon.

IB: I would like you to give us your views on the current access levels to water supply in informal settlement of Zambia. Do you think it's adequate or satisfactory?

TUM: Well, I will....think its not adequatethe reason being that I would rate it at 50%.....coverage and.....the reason being that I think we would need to do quite a lot of capital investments in order to just upgrade these..... informal settlements. What we need is the network extensions those are the ones I think are very vital in order to enhance the service level.

IB: But why can't the utility provide this capital investment to expand the network?

TUM: The reason being that I think the amounts of monies that we realize from these areas are not enough, usually the tariffs that are used for these informal settlements are social tariffs and these tariffs are really below the amounts put in order to provide a service in an area. So what I mean is....this tariff being low is not cost effective so to say such that I think if we were to improve the network I think it should be able to provide a sufficient or at least a satisfactory service.

IB: Are you saying these areas on their own they can not survive, they can not stand?

TUM: My position on that will be they cannot stand on their own.

IB: How are they standing now, how are they getting the revenues to even do the services that are there?

TUM: It's more like a subsidized arrangement because.....there.....they are subsidized by these low density areas where we are able to generate money from....

IB: So it is more like a cross subsidy arrangement?

TUM: That's true, that's true!

IB: I see, I see. Now....so it means that what you are saying is that these areas are not viable on their own isn't it?

TUM: Standing on their own they are not viable.

IB: Ok.

TUM: Except I think in cases where may be we have a stand alone arrangement and this I mean that may be a system where it is independent and just completely from the main network for the city those may be its one out of ten that are able to stand on their own, I will give an example of Chipata Compound in Lusaka where I think its doing fairly well, because its high density and its also the area itself is actually very big, it actually even be bigger than some of the.....small towns in the country.

IB: I see...!

TUM: Yes!

IB: So it means these areas they must be large for them to stand alone, they must be large high population density and also there should be high economic activity in the area.

TUM: Yes, I think that is the main one, there should be high economic activity.

IB: So currently in your areas of operations here at Kafubu, what are the certain mechanisms you are using to provide water to these people. Do you have suggestions or any alternative styles or mechanisms that can be used to

enhance water provision to these areas? Are you satisfied with the current arrangement?

TUM: Well, with the current arrangement, unless we see an improvement in what we currently have, right now we are using a system that I would call a combined system, we have kiosks, those who cannot afford to have individual connections they get their water from Kiosks, but again we do not restrict those who are capable financially capable ofhaving an individual connection, that we do not restrict, we allow them.

IB: Now the kiosk arrangement is a public access point, who runs it, is it the community, how does the utility run that?

TUM: The kiosk arrangement is that we allow the community to run it partially, I say partially because they are they ones who choose of cause with our assistance they choose the person who mans the water point and then out of the total collection, the utility only gets 60%, the 40% goes to the vendor as a commission.

IB: This vendor, is he employed by the community or he is a stand alone private individual?

TUM: He is a stand alone private individual he is not employed by the CU.

IB: So would you call this a partnership between the CU and the private individual, community?

TUM: Greatly yes, it's in partnership with the community and the CU and the private individual.

IB: Would you say that the private individual's aspirations to make profit does that improve the quality of service and access?

TUM:.....In areas where there are no alternative sources of water that has worked quite well because they aspire actually to make profits and out of that we have seen that most of them have actually ended up engaging themselves in other income generating activities like owning a shop turning into a semi shop of some kind where they sell other groceries. But in areas where we have alternative sources, that I mean...shallow wells, it has not done very well reason because the demand for water from ...for

piped water is on the lower side because the only water they get from the kiosks or from the water point is for drinking for any other activities they would rather they get from the shallow wells.

IB: But those private individual is chosen by the community.

TUM: Yes he is chosen by the community.

IB: Because he is operating under the community itself. So he is not like a full private sector on his own, he is got the influence of the community, isn't it.

TUM: He has the influence of the community and also the CU on the other side.

IB: What if it was just full private sector without community involvement; do you think it would bring in any risks?

TUM: Well.....I think in the first place I think it may not survive because I think what they get, the amounts of money that are made from that compared to the time that is spent selling that water is not enough, its.....ya...its not enough. But again the arrangement being where the CU gets at least the minimum contribution from the community, that one I think is okay, at least for the time being until such a time I think that we have developed our network so well that they are able to stand on their own, I think for the now we can.....

IB: So would be the risk if the private sector was to stand alone without community involvement?

TUM: I think the risk would be in the first place I think acceptability of the community would be quite difficult, because we see the community, they take ownership in the schemes because they are part of the decision making that are made in the communities even in selection of the vendor their voices are actually very paramount actually.

IB: Right....Now if the private sector was to participate you indicated the risks, but lets say they were to participate do you think in that contract between them or transaction between them and the utility, what aspects do you think would suggest to be included to make iton the other side.

TUM: Well I would suggest I think a very aggressive participation of the community, the private sector being on the other side and the community should be very much part of whatever activities taking place because what happens is you find that the private sector they will be in the minority in an area but the community themselves they are more and you know in these informal settlements that's where there is very high level of vandalism such that if they are completely left out I see a situation where their infrastructure would be completely vandalized because they could not have been part of the decision that could have been made in the particular community.

IB: ... are there any other issues that you would like to add on this matter of water provisions to informal settlements?

TUM: Well, I think one thing I would want to point out is that I think for the success of these schemes one thing that stands out quite prominently I think in the successful operations of these schemes is being able to account for every drop that is supplied in an area, we should be able to have systems where we have input volume, we should be able to determine the input volume and also be able to determine the volumes that are consumed in an area and at the end of it all if the network is strong enough to withstand the pressures that they could be subjected to I think the scheme should be able to operate fairly well.

IB: Thank you very much.

INTERVIEW TRANSCRIPT No 6

Date: 19th October, 2011
Time of Interview: 09hrs
Location: Mulonga Water and Sewerage Company Corporate Head Office, Chingola, Zambia
Interviewee ID: MM
Position: Managing Director
Experience: 13 years

IB: I would like you to indicate what your views are on the current access levels to water supply in informal settlements of Zambia, do you look at theand levels of access as adequate or inadequate currently.

MM:....In ourmy company that I head is Mulonga Water and Sewerage Company and this company services three towns on the Copperbelt Province of Zambia, these towns are Chingola, Mufulira and Chililabombwe. Now these are mainly mining towns so in the informal settlements and peri urban areas and the low cost areas our service we have got quite some challenge, at the moment I would say that we are in terms of water service coverage and sustainability we are at about 40-50%. The problem mainly in these areas is the state of infrastructure; you know its quite some very, very big challenge. So apart from the infrastructure itself, we have also got you know...these ...settlements which are coming up and somehow unplanned in some areas, so you find extension of this network is notbacked by know ..our own...capital...we do not have you know immediate available capex to be able to extend the service, so I think for now I would say that the informal settlements service delivery is inadequate.

IB: Now you are a mandated services providers so I would like you to comment on the levels of effort that mandated service providers such as you are applying to address this service level shortfall.do you think you are..... exerting

enough efforts to redress this or what efforts are you applying to redress this problem?

MM: *I think the infrastructure that we are serving also these areas especially the low cost areas were set up in the 1950s, now the infrastructure is such that it was designed for a particular population which has now may be tripled or quadrupled, now in our informal settlements and low cost areas, we also got you know these mushrooming of illegal structures surrounding the main houses, so because of that I would say that from a utility point of view there is a high level of effort to try and sustain the operations because if at all you are not there on the ground to ensure that the sewers which are flooding because of overload, an infrastructure.....meant for a particular population is now overloaded so there is this continuous flooding. If our effort was not at its peak, we will not be able to ensure that you know there is some flow in this sewerage system. Then on the water side also we talk about infrastructure which is really should have been due for replacement may be 10 years ago, by now we should have up scaled it and ensured that know, we improve on the service. But that has not been done so what is sustaining even the 40-50% that I talked about in terms of service delivery is because of the efforts that we are applying in and then this effort from a utility point of view it means that that these are quick fix solutions as we wait for major investments. The solutions is overhaul, let go of the old reticulation system put up a new network and ensure that you re-plan the whole thing to ensure that you service these customers. But for now we've gone to do all these quick fix interventions and this is having an effect on labour that's why you see that on our books we've got a lot of casuals because these have to attend to these emergency things and sewer overloads and you know water pipe bursts, so I think from a utility point of view there is a lot of effort that is going into these informal settlements....*

IB: Would you say service to these areas is viable, commercially viable for the utility such as yourself, do you regard service to informal settlements is commercially viable?

MM: First of all I think in answering that question, am going to look at the way our tariff structure is at the moment, you know we've got this multi-tier tariff structure, where you know the high cost, the ...areas have got a particular tariff and then also the middle cost have got a particular tariff then these informal sectors you know have got the tariff on the lower side of things ok. That is the starting point, and then even before I look at the informal sector alone, I've got to look at the tariff structure itself in the Zambian context. The water companies have been, are in their formative stages, so we have been growing this tariff to ensure that we graduate to full cost recovery and ultimately to areas where we can be able to finance you know... capex. So my view, my very, very strong view is that these informal sectors we've got to carry them along, so the revenue from these informal sectors or the business concept to these informal sector at the moment is not sustainable. It is not, an area where we can say that as a commercial utility we can be able to service and recover our cost at the moment. The tariff structure does not support it and also just a fact that you know these customers their ability to pay, the effort that you are going to put in to collect the little that you bill them, and ultimately also I think the cloud of the political interference or political involvement in these structures because this is where you've got all these people who have got a bigger voice in terms of you know some other forum. So that makes you know business to these areas is non sustainable.

IB: So what business model are you employing to provide service to these areas because you are saying you need to carry them along, so what do you mean, could you just explain that?

MM: I think the.....carrying them, means there is this concept of cross subsidisation where you find people who are affluent who are in the high cost areas are the ones, revenue like if I were to speak for Mulonga

water and sewerage company, what is sustaining Mulonga Water and Sewerage Company is a fact that we've got some bigger customers who commercial customers, the mine customers where we get al.most 50% of our revenue, its that money that we are using and ploughing to service these other you know areas, the informal sectors. So really as a concept, the high cost areas, the commercial customers, the money that we are getting from there is the money that we are using to plough into these areas. On their own if we were to say that we ring fence and compartmentalise our operations and say that each area stands on its own, these areas will not survive.

IB: Now I would like you to just comment a little on the concept of partnerships, you've talked about of carrying along these areas, are you as a utility directly involved in providing services or may be engaging in some form of partnership arrangement with other entities or if you are not doing that, do you believe partnerships would enhance or would improve the management and effective method of your provision, service provision in these informal settlements.

MM: Yah, I think.....the..... in the seven years that I have been Managing Director for Mulonga Water and Sewerage Company, one of the areas that has been troubling me are these informal low cost areas, what model can we come up with? Recently, I was privileged to have attended World Water Week which is an annual convention in Stockholm and I attended some presentations where there were some talk about models that have been used in Kenya for delivering service too some of these informal areas. In my view, I think sitting in some of these presentations, I feel that you know, there systems that we can replicate in Zambia, where as commercial utilities we concentrate on the core business areas and that will help us to reduce on our staff numbers, it will help us to offer a sustainable service you know to our customers. Then these informal areas, we should be able to come up with some form of trust, some cooperative, some local arrangement under the Resident Development Committees and be able to ensure that these people run these systems. Trust whatever model that we

come up with, but it will be a question of you know they run these as small scale businesses, then for us our role is just to provide them with bulk water up to a certain point, that's how I think that concept I saw it....its something that we can model in Zambia and see how it benefits the water utilities.

IB: It's a partnership arrangement?

MM: It's a partnership arrangement.

IB: What risk do you see in that process?

MM: I think the major risk that would be there is that you have got to upscale the skills of these people, you've got to see to it that they are trained because this will be almost like the way we run the kiosks system you know and the issue of collection of revenue you find these vendors may not draw a line on what percentage belongs to them, what percentage will be remitted to the company, so you may end up with a system where you've got a meter and then you are charging these customers but at the end of the day you are unable even to get you know your collections so I think that is the major risk point that I see where we require a lot of training to see to it that there is that appreciation that they should only cover revenue without loss to them, and also I think it something that from a financing point of view, its something that we should be able to throw to the donors under a pilot scheme.....say for about may be one, two years so that know, that risk is somehow mitigated in the interim before we fully absorb it.

IB: What about the beneficiary community, you talked about the small business entity in the community working in partnership with the utility as a model that you are proposing, what about the beneficiary community do you think there are any role in this arrangement or should they have any role in this arrangement?

MM: I think if if.....the biggest problem that we've had now is for the beneficiary community to appreciate that water comes at a cost, at the moment I do not think that you know they have grown to that level of appreciation and apart from just paying for water there is also the issue of

vandalism to safeguard these...you know the water utility companies have got a limited workforce like in my company we've got about 350, we can not be able to cover an area which has got 2000 customers, so its important that you know, the beneficiary themselves, the customers are also involved in this arrangement because then that way we will be able to be assured of policing this infrastructure, we should be able to say that you know they will be involved in timely settlement of the bills because they will have a stake in the business. So I think for Mulonga Water and Sewerage Company thewill be with the local business then that local person should be able to engage the beneficiaries. Ultimately, the water utility companies are the ones who benefit because of I think the compliance levels will be slightly higher.

IB: MM, are there any other issues that you would like to add on to this issue of service provision to the informal settlement?

MM: I think the challenge of service provision to the informal settlement goes with the challenge of water provision generally you know to the customers, these utilities are new companies and these utilities in terms of investment levels they have slightly lagged behind so that I think has impacted quite greatly on, because we are now coupling with even water supply to the affluent areas, to the commercial customers. So that's were I think the informal sectors have also not been received so much...attention. Thank you very much.

IB: Thank you very much MM.

INTERVIEW TRANSCRIPT No 7

Date: 21st October, 2011
Time of Interview: 13hrs
Location: Lusaka Water and Sewerage Company Corporate Head Office, Lusaka, Zambia
Interviewee ID: JJJ
Position: Managing Director
Experience: 13 years

IB: My first question to you JJJ is for you to give me your views on the current levels of access to water supply in informal settlements of Zambia. Do you think the current level of service is adequate and satisfactory? If not give your comment.

JJJ: Clearly it's not adequate,and obviously people have been ...we have seen that quite a number of people need to have better access. We have seen that they are aspiring for better services because for us as Lusaka Water and Sewerage Company, there was a time when we undertook a survey to find out what levels of service people would like to have and obviously what we have noticed is that most of them would love to have a better level of service...and also access is quite, quite questionable.

IB: Alright, so what you are saying is that access is inadequate?

JJJ: It is inadequate.

IB: Now what kind, can you comment on the level of effort that your utility is applyingto redress service level shortfall.

JJJ: We have approached it in various ways first and foremost to try and identify so that we can have a clear understanding of what the gaps are to identify the areas that are inadequately supplied and then also to try and mobilize resources to try and make sure that all these people are serviced but obviously the approach is quite different given that certain areas are quite far removed from the services so it means when we extend, we need

to decide on the level of service that are giving to them, either through communal facilities or indeed where it's possible yard connections to the properties that they have, in fact most of the properties what we have noticed is that over the years these informal settlements are getting better...in the sense that most of the people seem to be getting much better economically and they can, they seem to be able to build better houses so meaning that as they progress, they would want to see a better level of service other than communal facilities, so they would prefer to have yard connections as time goes on.

IB: JJJ, do you think that statement where you are saying that they are getting better all the time the people in the informal settlement, would you say this is applicable to all CUs in Zambia or may be to the City of Lusaka being the economic centre of Zambia?

JJJ: I think that's a very good observation. My view is that mainly this iscould be unique to Lusaka alone given the way Lusaka Water...Lusaka City is actually growing, its quite different from other areas.

IB:, do you believe providing this service to informal settlements is a commercially viable proposition, is it viable.... looking at your entire service area when you look at informal settlements, do you think its viable. If it's not then what strategies could be employed to enhance its viability?

JJJ: I think right now the services that we are providing are really not viable for the simple reason that the tariffs are on the lower side ...and alsothat's mainly because of....., we are supposed to provide a certain level of subsidy in these poor areas. However, it's very interesting that for us especially here in Lusaka where we have tried to have delegated management systems to provision of services, we see that there is a high possibility of making this service provision closer to being viable, but obviously then there is a number of things that we have to do to try and make the cost of provision of service to be lower than usual and one of these we have found to be a very good approach is to try and use the communities to provide certain services because the cost of their labour is,

can be quite low and also because of their involvement it means the community itself would be involved in the management and also in overseeing some of these activities, so that helps in reducing the cost of service provision.

IB: So you are saying it is imperative for informal service water provision that the communities participate.

JJL: If you want it to be viable, yes and yes! Otherwise it cannot be viable.

IB: Now, I would like you to comment on what ways does the viability of informal service provision impact the mandated provider's ability to effectively operate and install network infrastructure?

JJL: ...That question is not very clear to me

IB: In what ways does the viability of informal settlementswater service provision impact a mandated provider's ability to effectively operate a network infrastructure let alone provide a network infrastructure?

JJL: In the same community or elsewhere?

IB: Yes, in the same community.

JJL: Obviously if you have the background that its, currently the operation is not viable, it means providing services to these areas is a strain on the utility. That's a serious impact meaning that you will have a challenge to balance up in terms of trying to have all your operations sustainable, but then it means that a lot of thing would have to do to try and, and....balance up. What am trying to say is that if its a cost to you and recovering even the little cost that you are pushing in, then its a strain on your operation as a water utility.

IB: How would you go round at all, how would you go round since you are a mandated, you are mandated to provide that service?

JJL: Like I said for us what we have seen to be working is partnering with the community and the approach we are doing now is to have delegated management systems in the peri urban areas where we create a small ...community based...utility if you like to help us to manage the facilities, the water service provision in that area. We have also engaged water

vendors in the community who are helping us to manage at a lowest level which is the point of collection...and we think that has helped quite, quite a lot.

IB: What are the key attributes that these communities have putting them at the point of advantage in terms of participating in these service provisions. What key attributes do you think are..... inherent amongst the communities?

JJL: One of the things that we have noticed is that most of these communities in Lusaka I don't know about the others seem to have some level of organization within them.....obviously this has been mainly with the participation of the local authority, the Councils. They have what are called Residents Development Committees which have now been transformed into Development Committees and these are actually elected leaders within the community that oversee the developmental activities in the area. So you find that working with them because already they seem to have some form of organization and that's what we have tried to tap into and create this other system which can help to oversee the operation of the provision of water and sanitation services in the communities.

IB: Do you think there are any alternative mechanisms or management mechanisms or models that you can apply apart from the one you have mentioned to provide service, to provide water services to informal settlements.

JJL:...the alternative really is that the utility should go in themselves and do it fully hundred percent without community participation the other one is obviously may be to use private sector to do it. But there are pros and cons to each one of those ...where you want to go in as a utility hundred percent to do everything is where we are coming from and we know of challenges with that, without the community participation. Private sector participation, we haven't really used it but we think it might be a little bit more challenging because then the motives are completely differentwe need to balance up a profit motive than a social motive on the other hand because a private participant, a private sector organisation will be looking more at what is in it for them as opposed to trying to just provide a service

for the people. So there are fears in terms of the cost, are the people going really to afford and so on and that is why the approach really to use that third option has been little cautious, we haven't gone for that.

IB: So what you are saying is that you don't think private sector would a bad proposition? Or you would want, you can apply the sector but it has to be modified in a certain way so that it takes care of all these concerns.

JJL: Agreed...it has to be modified to take care of the fears. The fear is that ...may they people have to pay more and remember our....one of the assumptions is that in these informal settlements the people who live there are actually poor people and so...a private sector organisation will driven by the profit motive like I said and so that is the beginning, how do we deal with that? So that people are not over stretched and end up paying too much for the services that they will be getting.

IB: JJL, in conclusion, are there any other issues you would like to add on this issue of provision of water supply to informal settlements?

JJL: ...Nothing much really but obviously just to say that ...informal settlements are quite a challenge in our experience as Lusaka Water, we have seenthere are a varied range of informal settlements others you really find people who can afford the service and even better, and so you end up having a mixture of a very poor living together with people who are far much better off and they can afford a service, meaning that when we are trying to come up with solutions, we really need to think a little bit more than using a blanket....solution say we are dealing with the poor, they cant afford the service, lets move in and give them this level of service, so it has to be consultative because the people understand what they think they can afford, because you might go with a solution that is really, really meant for the very, very poor and yet you are dealing with people who think they do much better, so meaning that if you go in with such a solution, you will not get the support that you want. So lets not be prescriptive, let's interact a little bit more with the people so that we understand really what their needs are and also what they can afford. You will be amazed I think, not long ago

we conducted a study to do with sanitation and we were going round trying to find out what level of service would these people want in terms of sanitation. A good number of the people I think more than 60% said look we want flush toilets also and ...in the mean time, the original plan that we had was that look, lets move in with the sanitation program to provide improved pit latrines in this community but then people said no no, no we want flush toilets, and so that information helped us to modify our approach and then we came up with the sanitation marketing approach where we were thinking that ok if there is this desire, then why not try to move in with a system where we can provide water.....and sanitation in these areas where its possible because the people are willing to pay for that. So the lesson here is that lets not be prescriptive, lets look at what people think they can afford before we come up with a solution and obviously solutions even within a small compound because from experience we have seen that these areas are made up of different people, others could be very poor whilst others are a little bit better of and others are far much better of.

IB: JJL, thank you for your time, thank you very much.

JJL: Thank you, you are most welcome IB, I wish you all the best

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IB: Thank you very much.

Appendix 5: The Semi-Structured Interview Guide No 2

UNIVERSITY OF CAPE TOWN

DEPARTMENT OF CONSTRUCTION ECONOMICS

RESEARCH TOPIC:

INSTITUTIONAL MECHANISMS FOR WATER SUPPLY TO INFORMAL SETTLEMENTS IN ZAMBIA

Name of Key Informant:

Interview Date:

Specific Area of Informant's Specialisation:

Questions

1. What are your views on current access levels to water supplies in informal settlements of Zambia? Is the level of service adequate and satisfactory?
2. What levels of effort are currently being applied by the mandated providers to redress the service level shortfalls (if they so exist!)? Are they adequate, if not why?
3. Would be necessary to include specific clauses that would compel service providers to render services to informal settlements?
4. What are the potential impacts of inadequate (or even none!) service to informal settlements within a prescribed service area?
5. Do you believe partnerships are a necessary component in the overall informal area service delivery framework? If so what form should these partnerships assume?

6. Do you foresee any potential risks if the private sector was to participate?
7. What role should the beneficiary community assume in the service delivery arrangement?
8. What key aspects should a transaction involving the private sector contain?
9. Any other issues

Thank you

University of Cape Town

INTERVIEW TRANSCRIPT No 8

Date: 26th October, 2011
Time of Interview: 16hrs
Location: Devolution Trust Fund Offices, Lusaka, Zambia
Interviewee ID: QET
Position: Manager (Chief Executive Officer)
Experience: 13 years

IB: Good afternoon QET

QET: Good afternoon IB

IB: I would like you to comment looking at the Zambian situationhow the current levels of access to water supply in the informal settlement are, do you think the current levels of access is adequate, is it satisfactory? Please comment.

QET: Thank you very much. I think when you talk about the current levels of access in these informal settlements,in terms of grading may be if I may say like that..... we..... I think since may be the 1990s, we can say there has been some improvement.....I think to a level where we can say may be up to 60% of the population has access to water supply and sanitation.....especially water supply and not sanitation. But, i think if you look at Zambia, we have abundant water resources, but I think the levels of access are still very low especially for the peri-urban areas....

IB: Which are the areas you are focusing on

QET: Yes, yes..., so...the DTF I think has done quite a bit of work in theseareas working with water utilities but I think the gap is still there because when we did a...exercise in 2005... it showed that only 36% of the peri urban population have access to what we termed I think sustainable water supplyfor sanitation its even worse, why we say sustainable water supply is because other may have to walk long distance to fetch water or they have to wake up at awkward times to go and get this water because may be it only come at certain intervals so..... if those parameters

are not met then that is not sustainable water supply, so if we apply that criteria....to the levels of service now in these peri urban areas I think we are still very low, its still very low.

IB: So you would say that the current service level as provided by service providers at the moment is inadequate, though gains have been made over the years.

QET: Yes, yes, gains have been made.

IB: Right...now what efforts or what levels of effort are currently being applied by the mandated providers to redress this service level shortfall?

QET: ...Yes, I think the service providers are trying to do their best I think within I think what they can do in terms of resources and so on, as you know I think....the utilities most of these are still new and in terms of capital base they don't really have it and so when you look at the efforts that they are putting in I think on their own but also with support from the Government through the DTF and so on, I think they are trying to.....to ensure that there is an improvement of water supply access into these areas, but I think we still need to do a lot especially when it comes to managing these peri urban schemes but they are trying I think they have their own limitations especially when it comes to finances.

IB: Why do you think they are have these limitations because these are supposed to be areas where they develop their business profile, but why do you think they are having these challenges to effectively.....service these areas?

QET:I think its the perception, the...the old mindset to say these peri urban areas you know they are not viable so maybe it is a waste of effort and time to go and invest in these areas but I always give an example of other utilities, power or telecoms, we can have an argument to say these are very commercial but for water I think we always think....like...no.... its just water kiosks, how much are we going to get out of that, to that becomes a hindrance because then with that mindset everyone doesn't pay attention, but I think when you look at the numbers of people, you know the proportion in the urban we find the majority are in these areas, may be

60%, even 70% in certain towns you find that these people actually reside in these peri urban areas, so I think if we don't change the perception that we have, we will still continue working within the box, thinking within the box, then those limitations will still remain and we will still be saying no, these areas are not viable.

IB: Would you say there is a capital shortfall, the shortfall of capital for these utilities to effectively provide infrastructure in these areas?

QET: Yes, there is a shortfall of capital, I think may be this has also a historical background because as you may know we still have a backlog of capital financing for the water sector I think we had a long period of time I think where these utilities were not capitalised, most of their infrastructure has actually broken down, so when it comes to investing in the peri urban areas, you are not just looking at putting infrastructure in the peri urban areas, you are also looking at the entire system from the production side if we extend into these areas, is the water going to be adequate, is supply going to be adequate so...yah...I think there is still a lack of capital in the water utilities I think which need also to be address.

IB:...so talk about capital, now do you think that as a way ofbecause I have head some Managers of some utilities say, look these areas are not viable.... they are you know.....when they look at the whole business area they find that they have got these high cost areas, industrialised where they make much, much more as compared to the efforts that they would apply, when compared to peri urban areas in informal settlements where there is a lot of effort but the output is quite small, the yield is low, so do you think thatGovernment should put in specific clauses that will false or compel utilities to ensure that they do something to improve service delivery to these areas?

QET: I think in terms of regulation I think that is already there because as you know, the licence provides.....stipulates that the service provider is responsible for a specific area which also includes the peri urban areas, as long as these areas are within the jurisdiction of the district authority the water utilities are responsible for ensuring that they provide a service in

these areas, so the onus is on the actually the regulator to ensure that utilities are putting in a lot of effort to ensure that there is a service in the peri urban areas.

IB: Ok....., what do you think could be the impact, what do you think are the impacts of inadequate supply of service to informal settlements.....prescribed service area?

QET: Yah...like I said we have the majority of the urban people residing in these areas, these are people that we mix with on a daily basis....you would find that may be they are people that work in our homes or for those living in the formal areas they are the people that come and work, you know they do these domestic chores you know garden boys and so on, they come from these areas, so if water supply and sanitation is not addressed in these areas I think the implications and the impact is going to be felt also in the other areas if there is an outbreak of a water borne disease, most likely this waterborne disease will not just stay within that particular locality, it may also spread to other formal areas and so that is not actually be something that we would want to see. So in terms of effect I think we are not an island, I think the formal areas are not an island, they.., they.. you mix regularly, I mean people mix regularly from these two settlements, so there is need to improve services in the other areas.

IB: how do you reduce the external concept from partnerships,now do you think when providing service in these areas do you think partnerships can play a role to improve service provision in these areas, partnerships may be between the utility as the service provider, utility and the beneficiary community or other private entity, do you think partnerships are required so that they could help to enhance...service provision?

QET: Yah, partnerships have been tried before, I think you know that there were partnerships between the utilities and the residents development committees or the area development committees, but these partnerships did not work because I think one party especially the community side they abrogated on certain I think requirements and also maybe the terms of

agreement...there was a lot of abuse in short when it came to resources that were coming from the project from the schemes...the revenues and so on. You would find that the community organisations started abusing those resources and when there was may be a break down, and the community based organisation was supposed to go back and do the repairs they never did that so you would find that service actually deteriorated and the utility was also no where to come and rectify but in the process I think the utilities were forced to go back and you know normalise the situation. But I think those are lessons coming from long time ago, we can think of refining them and one of the partnerships may be that could work is the utility partnering with entities, well registered entities, may be private, small private operators those that have a history of running business, am sure that can work.

IB: So you are saying partnership can play a role, that is if the transaction should be carefullydeveloped, is that what you're saying?

***QET:** Yes! It should be carefully....I mean there should be....each side should be able to carry risks and be responsible for ensuring that if anything goes wrong they will actually be responsible, its not like companies, you know briefcase companies today its there, tomorrow its not there, you cant even find them when they wind up, but if they know that they have a responsibility then those partnerships can work.*

IB: Ok..... And these are partnerships between the utility and say private operator, what about the community, do they also fit in somewhere when we say community?

***QET:**Yah, its possible to bring them on board also...but you know the community also may benefit in the sense that they may be employed, members of the community can actually be employed by that small operator, but I think when it comes to managing its better that let the private operator manage it independently so that he is responsible for anything that goes wrong, because if you bring in the community....*

IB: Then what role will the community play?

QET: The community you know can play a role of ...how do I put it.....I don't know how they can come in but they still can play a role like when it comes to regulating the small independent provider you know they can try to operate...

IB: So they must play a role?

QET: Yah they must play a role...

IB: I see

QET: But I think what am saying is when it comes to managing I think its better that let them manage it independently..

IB: The private operator

QET: Yah the private operator so that there are no excuses on the side of the operator to say ok am doing this because the community has done this and that..

IB: You are the Manager of the Devolution Trust Fund and you have financed a lot of infrastructure development amongst the utilities in Zambia, can you just give us your thoughts on your experiences on this role that your organisation has played, has it...to improving service delivery in the informal settlements?

QET: I think we have been around may be for the last seven years in terms of I think from the time that we up scaled but we started basically in 2003... we did a bit of pilots I think up to 2006 when I think we went across the country. I think when you look at what has been done now, I think its quite a lot and when one sits down and says what if the Devolution Trust Fund was not there...what, I mean how was the situation going to be in these peri urban areas because mind you I think as of last year (2010) in December, we....utilities has managed to reach about 800,000 people I think when we talk about this year, we are talking about close to 1,000,000 people have had access through the projects that we have financed..

IB: Improved access

QET: Improved access yah, so if the DTF were not there I really don't know how the situation was going to be in some of these areas. Of course there are also other efforts from other stakeholder but I think significant I think

efforts have come from the financing that the DTF have provided, yah so....I think there is an impact and also the profile may be of peri urban when it comes to the water sector has actually been improved, it has gone up, the profile has gone up because I think most of the utilities have a unit that overseen operations in the peri urban areas unlike may five, ten years ago. If one was working in the peri urban unit at a CU level I think your colleague in the CUs would look down upon you and saythese guys they are just wasting our time and money so even when it come to sharing the resources within the utility those are the last ones to be looked at. Yah but I think with the effort, I think the partnerships that have been there between the DTF and the utilities I think that profile has actually gone up and everyone now is thinking how to resuscitate services in these peri urban areas because its one thing giving the infrastructure but like I said in the beginning how do we manage them? Ok, and one of the things that am normally looking at is of course we can say there isn't much we are getting into these areas, but how much are we putting into these areas? Ok, that is the question that we need to start asking ourselves if we are putting in a lot than we are getting, I think we need to find a way of breaking even so that we are not wasteful ok, specially when it comes even to issues of non revenue water do we know how much water we give to the peri urban areas? I think most utilities don't know how much water they supply to these areas, I think that is where the problem is because if we don't know how much, we cant measure how much we are putting in, then how do we manage these scales, ok we may be talking about this non revenue water thing may be the biggest culprits are in the peri urban areas and if we are able to curb that, may be we can you know...make...

IB: You don't fund projects in high cost areas?

QET: We do fund projects in high cost areas but those are just performance enhancement fund projects where utilities want to improve on certain efficiencies in their operations, then we can go outside peri urban

areas and fund anywhere but when it comes to improving access for water its basically the peri urban areas.

IB: I would like to thank you very much for your time and your insight to proving valuable to our research, thank you so much.

QET: You are welcome and all the best.

University of Cape Town

INTERVIEW TRANSCRIPT No 9

Date: 28th October, 2011
Time of Interview: 07:30 hrs
Location: Ministry of Local Government and Housing, Early Child Protection and Environmental Protection Offices, Lusaka, Zambia
Interviewee ID: PL
Position: Director of Housing and Infrastructure Development
Experience: 28 years

IN: I would like you to give very briefly what your views are on the current access levels to water supply in informal settlements of Zambia, do you believe the service levels of access are adequate or satisfactory?

PL: *.....well, first of all let mefirst congratulate you on... you know the process that you are going through.....I think its very important that we are able to document some of the things that we do especially in the water sector, I also want to state that firstly..... water and sanitation ..are a priority sector in the Government's economic programmes and therefore Government attaches a lot of importance in trying to achieve universal coverage for all the people of Zambia, now as regards the service to the unplanned settlements.....it is important that...weI think state what the situation is ...in these settlements...statistics show that we accommodate in some case more than 70 - 75% of the urban population within the unplanned settlements...what therefore that means is that the majority of the urban dwellers are actually found in the settlements which are deficient in most of the municipal services, they may not have access roads, they may not have drainage, they may not have solid waste management services and therefore a lot of things are happening in that environment. In the case of water..... in the past we supplied them from what we call stand pipes.....pipe and we expect that everybody should walk to that stand*

pipe and get their share, others have to walk crossing roads to the nearest formal settlements where water is available, others have dug wells which are unsafe and they getting their supplies from there. So in general we are not satisfied with the access.....and this is why we have defined some programs which will address the deficiency, but at the moment we are not able to provide people in the peri urban areas adequate service even if we are putting up kiosks and so on but they are not adequate, they are not as close as possible, so there are certain disadvantages that we still -----

IB: Why do you think it's inadequate?

PL: It is inadequate because.....there are some settlements which have no piped water as such, because of their nature, in the way that they stated, so we still have some of those settlements without and there are some settlements which have stand alone systems where may be a donor ..has gone out there and built at a school or within the community.....to cover a certain proportion of people with a facility so the services are not....covering all the areas I can give an example for instance of ...Ng'ombe compound where we worked very hard and got some resources, we were only able to provide half of the settlement, so in other words if they assume that the distribution itself is equal, then we covered half of the population it meant that the other half will have to walk or continue to use the hand dug wells.

IB: Now we have these mandated service providers that have been established in Zambia called commercial utilities, now can you comment on the current levels of efforts that are being applied by these mandated service providers to redress these service level shortfalls...and you should at least elaborate on that issue.

PL: Well, first of all the commercial water utilities are licensed...by or through the National Water supply and Sanitation Council, the regulator to provide services to people within their jurisdiction. Now as it were, the infrastructure...that they are managing may not cover all the areas, so they have to move with speed to try and first of all source the water and deliver it to where it is required ...and one could say that you know they are doing

their best... to be able to do that but we can do more, we can do more because I think that in the business plans, in their long term plans they should focus on the unplanned settlements because like I said that is where the majority of their people are....and probably that is where even economically they could advance and you know tap more revenues into their structures. But there is an argument that.....people hold that especially large utilities that some of these informal settlements are not really viable from a business perspective, and so.....it's actually a burden providing a service there.

IB: From a strictly business perspective, would you comment on that?

PL: Yes I would like to comment on that. From a strictly business perspective the mobile phone providers have realised that if they are going to make money, they would make the money from the unplanned settlements and they have produced or come up with products that fit that environment where they are able to structure in such a manner that it is like daily service every morning somebody buys little of talk time or air time for people to speak, and I think as water utilities we must begin to think in that manner because it is not true that there is no money in these settlements, there is a lot of money but it goes to those areas that are attractive to the people ...these people have got.....DSTV or you know, whatever you know those channels are called which are pay channels, so they are able to pay to watch television, these people some of them own two, three cars and if you look at the family, an average family of four, five, you will probably find two or three mobile phones. If they are able to put a little bit of money into those other areas because they are attractive, they have to make water and sanitation services equally attractive so that people feel..... they cannot exist without water.

IB: Now, what about the issue ofthis issue of mandated service providers, one would still believe that this is not viable, do you think its necessary to include or introduce special clauses that would compel service providers to provide services to these informal settlements, do you believe that there should be

certain clauses that mandate you whether you feel....commercial utilities feels this area is not viable. Do you believe that there should be certain clauses that should mandate one?

PL: Yes and no! First of all the very fact that an institution is mandated to provide a service.....throughout a given area which include both formal and informal settlements means that they are obliged to provide the service to all. The second thing is that if they are then not able to think beyond the box then maybe they are in a wrong job. We need innovative leadership in the utilities, we need...leadership that takes the challenge to actually be able to deliver where others think its not possible to do so, and that is the challenge that mobile phone companies have shown us. That's the challenge that thetelevision services providers have actually shown us...

IB: So you are saying that from a Government perspective isn't it?

PL: I am saying it from the Government perspective, I am saying it from a perspective thatam also a professional...and in my profession we don't talk about impossibilities you know, we talk about everything being possible.

IB: Ok, take me to another dimension. What are the potential impacts of inadequate service in informal settlements, what do you think would be the impact, or are the impacts when service is inadequate?

PL: ...well....currently...a number of districts, we are just a few weeks into the rain season, I think more than five or six districts have reported cases ofI think its typhoid...now that is the higher end ...we may not have heard much about cholera attacks because cholera...is almost an every day discussion, dysentery, just diarrhoea those are things that are caused by either contaminated water or insufficient water ...for people to have proper sanitary conditions around them , to be able to wash their hands with soap to be able to keep themselves you know, those are the impacts of not having sufficient water apart from the fact that you know...if we don't drink sufficient water ..we are in perpetual state of dehydration which we don't

see you know, but many of us don't drink sufficient water and why don't we drink sufficient water may be we are scared that the water that we have around us is not ...very, very, very, clean...so in other words in terms of the impact of not having sufficient water is in terms of you know the health of the people which is extremely hard too that you know the youngsters....who are supposed to be going to school now are forced to go looking for water and in the process many people have actually been knocked down by vehicles as they cross the road if you go on great north road you see people crossing from the western side to the eastern side because there is no water on the western side and that is common in a number... in many of our places.

IB: Now you talked about innovation...in providing services to these informal settlements, I would like to bring in the concept of partnerships, do you believe a partnership type of arrangement would be a vital or necessary component in this service delivery to informal settlements and if so what form do you think this partnership should assume?

PL: Well, yes I think we have tried partnerships....different types and yes those are useful, ...because that is what service provision is all about...now to mention some of the partnerships that we have had in the past is that we have had what we call Resident Development Committees forming water committees and so on and trying to improve their lot. We have also had partnership between utilities and may be individuals with the settlements...to act as vendors on their behalf and we have had also under the framework of the Resident Development Committees. Water Trusts which have come up and created, as you know more or less enterprises run by the communities to provide that service and if these work with the water utilities, the water utilities can do their capacities and so we think that they could be quiteproductive.

IB: Do you see any potential risks that ...the private in these partnerships would...assume in this arrangement, do you foresee any risks on their side?

PL: Yes, there're risks ...because these community enterprises of course...are run by individuals who might have ...their own aspirations and their own benefits to pursue ...but if they are properly coached in some agreements.....I think that in the end they will be more beneficial than they will be detrimental.

IB: My second last question is on what do you think the beneficiary community or role the beneficiary community could assume in this service delivery arrangement, you spoke about the RDCs, is there any other role that you think the community could assume.

PL: ...When you look at theW.A.S.H. which is the Water and Sanitation Health concept that we introduced in some years back...it looks at the role of the community in terms of being the ...the primary planners, the primary managers of there infrastructure and facilities that they have, so in that case, the communities are expected to group themselves and form an executive which then would be working as a board to give guidance to the provisions of services....

IB: To oversee!

PL: To oversee the activities and to ensure that the...aspirations of the community are being answered, because all too often as a professional institution we go out and make assessment and decide what is best for the people and then the people react and show you that actually you haven't done them any justice at all so the community should be....the beginning of everything because we are in a demand driven set up now, we want to go the community and say we are here we be able to assist you...what are your problems that you want to be dealt with.

IB: Lastly PL are there any other issues that you would like to add to this topic we have been discussing?

PL: Well its difficult to say, we have said a lot of thingsbut you know just to say that as Government we have set up a program to address the demand for water supply and sanitation...for the people of Zambia in urban areas which covers a horizon of now until 2031...and therefore we need to

find as utilitieswhat it is that we can do in order to fulfil the objectives and goals of this specific program. It also touches on the issue of mandate which you mentioned....because it talks about forward planning, you know, how should we structure ourselves as utilities, we should not be running behind the horse all the time, we should be able to control that horse and say wait a minute, this is the direction in which we are going so we must be able to say ok, if the council is going to develop in this direction, lets put in our services and then they can go and build or do whatever they want because we ourselves have met our part of the bargain.

IB: I want to thank you so much for your time.

PL: Thank you very much and best of luck.

IB: Thank you

University of Cape Town

INTERVIEW TRANSCRIPT No 10

Date: 31st October, 2011
Time of Interview: 13hrs
Location: NWASCO Offices, Lusaka, Zambia
Interviewee ID: KH
Position: Director (Chief Executive Officer)
Experience: 17 years

IB: I would like you first of all to comment on the current levels of access to water supply by those residing in informal settlements. Would you say it's adequate, if it's not adequate, could you elaborate why?

KH: I would say it's not adequate and I think for the country, we are looking at the most highly populated areas and that's where people are so the intervention there would go a long way. It's not adequate because infrastructure.....in these unplanned settlements initially were not planned, and...people settled before infrastructure was in place and even whatwe are doing as a country to try and ..assess the situation is not enough because we are looking at.... the population that is quite huge and the investment that is needed is also huge to try and change the set ups. So the service levels are quite low in terms of the people that are accessing water as a percentage and also at times quite of the water that is supplied in those areas is also not ok, we have different ..you know....players in the informal settlements especially when you look at Lusaka, we've got...some community based...systems which in terms of the water quality....our experience has been that the water quality has been poor. So you are talking about both quality and also the quantity of water it's not enough to meet the demands in these informal settlements.

IB: But, in Zambia you have mandated service providers and these cover all urban areas in the country, why are you saying its inadequate, you've got service providers who are mandated by law and through the licence that you give them

to provide this service. Are there any particular challenges that they may be facing, would you want to elaborate on them?

KH: Yes, the challenges I have said, its people have settled and they have to take infrastructure there and the utilities have to go in there... but with limited investments. I know there has been efforts through the Devolution Trust Fund that we are running as NWASCO, but even then that is not enough because when you look at the population as I have already alluded to, we are talking about huge populations in those areas and the utilities are doing their best but the challenges are still many. We are talking about challenges of putting infrastructure there because of the unplanned nature of these settlements. We are also talking about.....you know.....trying to give incentives to the utilities to be able to go in there and basically we are talking about financial incentives because utilities may not invest in these areas from their own collections because they are still yet to.... be able to sustain themselves so they need extra capital to go in there. But also there is also an issue of trying to manage the service in that area. I know some utilities that have struggled in spite of interventions in those areas but managing a service in those areas has been a challenge because of the perceived low levels of consumption and hence low income are coming from these peri urban areas.

IB: Now you talked about incentives, so that could imply that these areas are not viable from the utility's perspective, from a strictly business perspective.

KH: Yah....from a strictly business perspective they may not be viable when you are looking at the low consumption levels, but if someone looks at the population I think there is a business case there....but obviously you are looking at what cost are we providing this service, what is the return.., .but my view is that when you look at the population in spite of the low levels of consumption, we could make a business case, but it also depends on the type of community that we are servicing. I know Lusaka, most of this populations are highly populated areas but when you go to places like North Western, these informal settlements are not as highly populated so

there then it becomes a challenge to go in with a business case then you have to rely more on the social aspect and the need for everyone to be covered as far as water supply and sanitation is concerned. I should also mention that sanitation is even a bigger challenge in these areas because sanitation is not as simple if you want to relate it with water, interventions are a bit more complex and also the options are limited, so sanitation is a major challenge when you compare it with water.

IB: So it means that the question of viability is also influenced by the population density?

KH: Definitely it is.

IB: Now, I would like you to comment on the issue of mandate and ...that these service providers are mandated, how do you think that comes into play in terms of provision of service in these areas by actually the mandated providers?

KH: Ok,as long as the community has been recognized by the local authority and its within what you would call the urban setting, the utilities are supposed to provide a service in their licensed area and usually these areas are within the licensed area of the provider and hence the mandate is that everyone within the licensed area should be provided with water and that is according to the water supply and sanitation act which demands that the utilities should be able to provide water in their area of influence or what has been captured in the licence.

IB: Now I would like us to zone in on the models of service provision,.....service provision in these informal settlements, what do you from your experience feel is the best model in terms of the....utility, should the utility partner with other entities or, I just want you to comment onwhat do you think is the best mode?

KH: Ok, the mode really would depend on what is on the ground, you've got places where you may have some interest groups that would want to partner with the utility for example and where you have people coming forward to come in and also partner with people that are involved in the provision of service it becomes easy, but you cant create a rule so to say

look, go and partner because water is not as interesting as may be the other commodities, so you find that very few people are willing to come in and you know provide the service at a profit, so water is slightly peculiar, so you could only ...you know use the already ...good will from other cooperating partners or other...you know... organizations that would want to come in but you cant create a rule that lets partner because you might not get the same results in other areas. So for me the utility is still the best mode in terms of providing the service because they've got a mandate and that's what they have been formed to do if some private partners or some communities come in, they should just come in to assist at the end of the day the mandate will still remain with the utility. In terms of the mode as far as technology, I think at the moment we are using the kiosks system to reach as many people as possible in these informal settlement but that is a measure, its a short term kind of intervention, in the long term when we have more resources and we are able to invest more, I think we could be thinking of upgrading the service levels, but for now I think its working well to be able to provide the service through kiosks because people are able to access clean water at an affordable price and also the utilities are able to provide this service cheaper, that's what I think.

IB: What about the beneficiary community themselves, would you advocate for a scenario that they don't participate or as beneficiary community they must have some say in the way this service is being provided.

KH: Obviously the community if they don't have a say ...then you risk the infrastructure that you are putting in there, so you need to sensitise the residents and they should also support the interventions you are making, and also...they should also own these facilities otherwise they will be able.., they will vandalize them, so the community is a very key stakeholder if you are to provide service like water and so you need to engage them and you can also find out what....role they can play, I know some of the roles that the utility would play is toensure your facilities are secured also ...ensuring that people are paying for these services. When you are talking

about the kiosk kind of arrangement, the community if they want they can easily influence the people not to pay, so you could use the community to ensure there is.... that, ...you know...partnership as far as influencing people to pay for the service that they are receiving. But they can also play a role in collecting.....you know....the monies that are due at the utility. So there are a number of roles that the community can play you just need to identify how you can engage with them and also what role they can play, you need definitely to bring them in the loop if you have to look at the sustainability of provision of water supply and sanitation.

IB: I want us to conclude now.....as a regulator, just highlight on the role that the regulator play in... facilitating...effective water provision in informal settlements?

KH: The...the regulator has a number of roles...as I have already mentioned the informal settlements at times have a challenge to provide the service, so the utilities should be able, sorry, the regulator should be able to create incentives that allow utilities to be able to provide the service in there, but also the regulator should be able to ensure the service is of quality in terms of the quantity and also quality, but also the regulator has the very critical role to sensitise the residents to be able to appreciate the service that they are getting and also be able to pay for that service. I know at times utilities, the regulator would attend to a number of complaints that people would raise, so in the interaction with the community, the regulator has a critical role to be able to give confidence to the residents or the community that the utility's doing are in its best to try and provide the service that is adequate and acceptable. So as a regulator at the end of the day, we are looking at, everyone should access water....affordably and also of good quality. And so everything that goes with the provision of good water that is of good quality, the regulator needs to get involved.

IB: Lastly,.. you talked in your earlier remarks on financial incentives for utilities to provide service in these areas, could you just elaborate on this issue of financial incentives for utilities as they provide service to these informal settlements.

KH: Ok ...given the scenario that we have in terms of water, there are people in the informal settlements that don't have water, there are also people in thewhat you might call low density areas, especially the new developments that also need water and if someone has to choose between the two types of clientele, it is easier to provide water to people that are going to consume larger volumes and also going to be assured of pay for the service, so because of that you need extra incentives for utilities to look at these peri urban areas. So depending on the scenario again you have a situation where it will be easier for the utilities to provide service in these informal settlements than the low density areas, so you have to look at the scenario and then design an incentive that will ensure the utilities do notthe informal settlements....the law also demands that we shouldn't segregate in terms of who receives water and so we could use that provision as an incentive to utilities to ensure they don't ignore the people in the informal settlements. So in terms of incentives we could be looking at both financial and non financial incentives. Financial would belooking at providing resources that would allow utilities to be able to provide services to these informal settlements. Non financial we are looking at compelling or creating an environment where utilities find it easy to provide water in these services....service areas in the informal settlements. So the regulator should look at incentives in a wider kind of arrangement than narrowing it to just financial incentives.

IB:is there anything that you would want to add on this issue ofwater provision to informal settlements in Zambia.

KH: Yah....I think one of the critical partner that needs to be engaged when you are providing water in these informal settlements is local authority because I think they play a critical role to co-ordinate development and if there is no co-ordination, we will continue to see these informal settlements mushrooming and we believe we need to work closely together with the local authority and see if we can avoid some of the unplanned settlements, so the utilities should.....local authority so that we know

exactly the plans of the local authority and then the utilities can also incorporate those plans as they are planning the future. Secondly, I think apart from the local authorities getting involved, there are a number ofyou know organizations that would want to come in and provide the service, our view is that they need to ...be able to coordinate with the utilities because left alone, we might create things that in the future might become white elephants, so whoever wants to provide water, I know this is a noble cause, they should be able to partner with the utilities, so that the utility can give guidance in terms of the type of service can be provided in that area, the technology and also just the equipment that needs to be installed because at the end of the day, the utility has got a lot of experience in terms of providing this service and so they are able to guide whoever wants to get involved in providing water.

IB: Thank you very much for your valuable insights.

REFERENCES

- ActionAid International (2005), *An In-Depth Study on the Impact of Operation Murambatsvina/Restore Order in Zimbabwe.*, ActionAid International in collaboration with the Counselling Services Unit, Combined Harare Residents' Association and the Zimbabwe Peace Project.
- Banda I., Muya M., Root D. and Cattell K., (2008), *Public Private Partnerships as a Vehicle to Providing Water Supply Services to Peri Urban Communities of Zambia*, Conference Paper presented to the Engineering Institution of Zambia Symposium, October, 2008, Livingstone, Zambia.
- Banda I. (2006), *The Development of Partnership Options and Implementation Guidelines for Commercial Utilities/Local Authorities and Community Based Water Supply and Sanitation Service Providers in Peri-Urban Settlements of Zambia: A Situational Analysis*, Lusaka, Zambia.
- Bloor M. and Wood F. (2006), *Keywords in Qualitative Methods: A Vocabulary of Research Concepts*, Sage Publications, London, U.K.
- Boothroyd K. and Hardcastle C. (2003), *Risk Overview in Public-Private Partnership*, in Akintoye A., Beck M. and Hardcastle C. (ed.), *Public-Private Partnerships, Managing Risks and Opportunities*, Blackwell Science Ltd., Oxford, U.K.
- Bryant A. and Charmaz K. (2007), *Introduction Grounded Theory Research: Methods and Practices*, in Bryant A. and Charmaz K. (ed.), *The Sage Handbook of Grounded Theory*, Sage Publishing, London, U.K.
- Bryman A. (2004), *Social Research Methods 2nd Ed.*, Oxford University Press, Oxford, U.K.
- Bult-Spiering M. and Dewulf G. (2006), *Strategic Issues in Public-Private Partnerships, An International Perspective*, Blackwell Publishing, Oxford, U.K.
- Bullock R., Little M and Spencer M. (1992), *The relationships between quantitative and qualitative approaches in social policy research*, in

- Brannen J. (ed.) *Mixing Methods: Qualitative and Quantitative Research*, Avebury, Gower House, Hampshire, U.K.
- Cano V., *Questionnaire or Interview?*, on line at <http://www.qmu.ac.uk/psych/RTrek/foundation/f10.htm>, 24/02/2008
- Carroll P. and Steane P. (2000), *Public-Private Partnerships, Sectoral perspectives*, in Osborne S. (ed.) *Public private partnerships, Theory and practice in international perspective*, CPI Antony Rowe, Eastbourne.
- Charmaz K. (2006), *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*, Sage Publications, London U.K.
- Christensen T. and Laegreid P. (2000), *New Public Management: The Transformation of ideas and practice*, Ashgate Publishing, Hampshire, England.
- Christensen M. and Yoshimi H. (2003), *Public Sector Performance Reporting: New Public Management and Contingency Theory Insights*, Government Auditing Review Vol. 10 pp 71-83.
- Connors G. (2007), *Watering the Slums: How a Utility and its Street-Level Bureaucrats Connected to the Poor in Bangalore*, PhD Thesis, Massachusetts Institute of Technology, U.S.A.
- Cooper D. and Schindler P. (2003), *Business Research Methods 8th ed.*, McGraw Hill Irwin Series, New York, U.S.A.
- Cowen T. (1999), *Public Goods and Externalities*, In Cowen T. (ed.) *Public Goods and Market Failures: A Critical Examination*, Transaction Publishers, New Brunswick, U.S.A.
- Crotty M. (1998), *The Foundations of Social Research: Meaning and Perspective in the Research Process*, Sage Publications, London, U.K.
- Drewry G. (2000), *Public private partnerships, Rethinking the boundary between public and private law*, In Osborne S. (ed.) *Public private partnerships, Theory and practice in international perspective*, CPI Antony Rowe, Eastbourne.
- D'Souza D. (1997), *Ronald Reagan: An Extra Ordinary Leader*, Touchstone Rockefeller Centre, New York, U.S.A.

- Easterby-Smith M., Thorpe R. and Lowe A. (2002), *Management Research an Introduction*, 2 ed., SAGE Publications Ltd, London, U.K.
- Eggers J. and Langert C. (1998), *Activity Based Costing*, Journal of the American Water Works Association Vol. 90 Denver, Colorado, U.S.A.
- Eisenhardt M.K. (1989), *Agency theory: An assessment and review*, 14(1) 57, www.istheory.yorku.ca.
- Estache A. (2005), *PPI Partnerships Versus PPI Divorces in LDCs*, World Bank Policy Research Working Paper 3470, Washington DC, U.S.A.
- Franceys R. (2008a), *Water and Sanitation for the Urban Poor*, In Franceys R. and Gerlach E. (ed.) *Regulating Water and Sanitation for the Poor*, Economic Regulation for Public and Private Partnerships, Earthscan, London, U.K.
- Franceys R. (2008b), *Regulating 'Divested' Water Utilities for the Poor*, Case Study 10: England, In Franceys R. and Gerlach E. (ed.) *Regulating Water and Sanitation for the Poor*, Economic Regulation for Public and Private Partnerships, Earthscan, London, U.K.
- Gerlach E. and Franceys R. (2008), *Economic Regulation*, In Franceys R. and Gerlach E. (ed.) *Regulating Water and Sanitation for the Poor*, Economic Regulation for Public and Private Partnerships, Earthscan, London, U.K.
- Glaser B. and Strauss A. (1967), *The Discovery of Grounded Theory: Strategies for Qualitative Research*, Transaction Publishers, New Jersey, U.S.A.
- Goulding C. (2002), *Grounded Theory: A Practical Guide for Management, Business and Market Researchers*, Sage Publications, London, U.K.
- Goyal A. (2004), *Getting Water from Public Private Partnerships*, Chapter 12.1 in *The India Infrastructure Report 2004*, 3i Network and Oxford University Press.
- GKW Consult (2005), *Community Assessment for Water Supply and Sanitation in Lusaka, Part III – Water for the Poor: Who Cares?*, Report for the Ministry of Local Government and Housing, Zambia and The World Bank, Lusaka, Zambia.
- GOU (1972), *The Water Statute*, Laws of Uganda.

- GOU (1995), *The NWSC Statute No 7*, Laws of Uganda.
- Grimsey D. and Lewis M. (2002), *Evaluating the risks of public private partnerships for infrastructure projects*, International Journal of Project Management 20 (2002) 107-118, www.elsevier.com/locate/ijproman.
- GRZ (1962), *The Town and Country Planning Act, CAP 283*, Laws of Zambia
- GRZ (1975), *The Housing (Statutory and Improvement Areas) Act, CAP 194*, Laws of Zambia.
- GRZ (1991a), *The Electoral Act, CAP 13*, Laws of Zambia.
- GRZ (1991b), *The Local Government Act, CAP 281*, Laws of Zambia.
- GRZ (1991c), *The Local Government Elections Act, CAP 281*, Laws of Zambia.
- GRZ (1994), *National Water Policy*, Ministry of Energy and Water Development, Lusaka, Zambia.
- GRZ (1997), *The Water Supply and Sanitation Act No 28*, Laws of Zambia.
- GRZ (2001), *The Peri Urban Water Supply and Sanitation Strategy*, Ministry of Local Government and Housing, Lusaka, Zambia.
- GRZ (2006), *Zambia Vision 2030*, Lusaka, Zambia.
- GRZ (2011), *The Sixth National Development Plan 2011-2015*, Ministry of Finance and National Planning, Lusaka, Zambia
- Hansen C. (2005), *Grounded Theory Research Methods*, (PhD Dissertation), Georgia State University, Berrett-Kohler Publishers, San Francisco, U.S.A.
- HDR, Inc. (2005), *Creating Effective Public Private Partnerships for Buildings and Infrastructure in Today's Economic Environment*, www.hdrinc.com.
- HDR (2006), *The Human Development Report 2006*, United Nations, New York
- Herbet R. (2003), *A Comparison of values applied to Goal Setting within Public and Private Sector water service industries*, (PhD Dissertation), California Coast University, Santa Ana, California, U.S.A.
- Helmut J. and Johnson G. (1992), *The Politics of Economics of Privatisation*, University of Alabama press, U.S.A.
- HM Treasury (1992), *Implementing Privatisation: The UK Experience*, on line at <http://archive.treasury.gov.uk>.

- Holton J. (2007), *The Coding Process and its Challenges*, in Bryant A. and Charmaz K. (ed.), *The Sage Handbook of Grounded Theory*, Sage Publishing, London, U.K.
- Hunter K., Subashini H., Egbu C. and Kelly J. (2005), *Grounded Theory: Its Diversification and Application Through two Examples From Research Studies on Knowledge and Value Management*, *Electronic Journal of Business Research Methods* Vol. 3 Issue 1.
- International Crisis Group ICG (2005), *Zimbabwe's Operation Murambatsvina: The Tipping Point? Africa Report No 97*. Brussels, Belgium
- Irwin T. and Brook P. (2003), *Private Infrastructure and the Poor: Increasing Access*, In *Infrastructure and Poor People: Public Policy for Private Provision*. The World Bank, Washington D.C., U.S.A.
- Judah T. (1857), *A Practical Plan for Building the Pacific Railroad*, Henry Polkinhorn, Printer, Washington D.C., U.S.A.
- Kayaga S. and Franceys R. (1998), *Market Orientation for Water Utilities*, Conference paper, 24th WEDC Conference, Islamabad, Pakistan.
- Kayaga S. and Franceys R. (2001), *Incentives to Serve the Urban Poor: South Africa's Case*, Conference paper, 27th WEDC Conference, Lusaka, Zambia.
- Khalifa M. (2010), *Redefining slums in Egypt: Unplanned versus unsafe areas*, *Habitat International* 35 (2011) 40-49
- Kelle U. (2007), *The Development of Categories: Different Approaches in Grounded*, in Bryant A. and Charmaz K. (ed.), *The Sage Handbook of Grounded Theory*, Sage Publishing, London, U.K.
- Knight R. (2001), *Housing in South Africa*, on line at <http://richardknight.homestead.com> viewed on 20th April, 2009.
- Kuhn T. (1970), *The Structure of Scientific Revolutions 2nd Ed.*, University of Chicago Press, Chicago, U.S.A.
- Kumar R. (2011), *Research Methodology 3rd Ed.*, SAGE Publications Ltd, London, U.K.

- Laffont J. and Matrimort D. (2002), *The Theory of Incentives – The Principal Agent Model*, Princeton University Press, New Jersey, U.S.A.
- Leiringer R. (2006), *Technological innovation in PPPs: incentives, opportunities and actions*, Journal of Construction Management and Economics, 301-8, ISSN 0144-6193.
- Leedy P. and Ormrod J. (2001), *Practical Research – Planning and Design*, 7th Ed., Merrill Prentice Hall, Upper Saddle River, New Jersey, Columbus, Ohio, U.S.A.
- Li B. and Akintoye A. (2003), *An Overview of Public-Private Partnership*, in Akintoye A., Beck M. and Hardcastle C. (ed.), *Public-Private Partnerships, Managing Risks and Opportunities*, Blackwell Science Ltd., Oxford, U.K.
- Locke K. (2001), *Grounded Theory in Management Research*, SAGE Publications Ltd, London, U.K.
- Marshall C. and Rossman G. (1995), *Designing Qualitative Research*, 2nd Ed., Sage Publications, Inc., Thousand Oaks, California, U.S.A.
- Mason J. (2002), *Qualitative Researching*, 2nd Ed., Sage Publications, Inc., Thousand Oaks, California, U.S.A.
- McGhee G., Marland G. and Atkinson J. (2007), *Grounded Theory Research: Literature Reviewing and Reflexivity*, Journal of Advanced Nursing 60(3), 334-342, Blackwell Publishing, U.K.
- Milgrom P. and Roberts J. (1992), *Economics, Organisation and Management*, Prentice-Hall, London, U.K.
- Moulton L. and Anheier H. (2000), *Public private partnerships in the United States: Historical patterns and current trends*, In Osborne S. (ed.) *Public private partnerships, Theory and practice in international perspective*, CPI Antony Rowe, Eastbourne.
- Muhairwe W. (2009), *Making Public Enterprises Work*, IWA Publishing, London, U.K.
- Mulenga M., Manase G. and Fawcett B. (2004), *Building Links for Improved Sanitation in Poor Urban Settlements*, Institute of Irrigation and Development Studies, Southampton, U.K.

- Munday S. (2000), *Markets and Market Failure*, Heinemann Educational Publishers, Oxford, U.K.
- National Council for Public Private Partnerships NCPPP, U.S.A., accessed 5th July, 2009, <[http:// http://www.ncppp.org/](http://http://www.ncppp.org/) >
- National Treasury PPP Manual (2004), *National Treasury PPP Manual Practice Note Number 02 of 2004 pp17*.
- Neerhout J. (1995), *The Making of the Channel Tunnel – A Modern Day Wonder*, on line at [www.lib.utah.edu /gould/1995/lectures95](http://www.lib.utah.edu/gould/1995/lectures95).
- NWASCO (2002), *Regulating Water Supply and Sanitation: Regulatory Tools and Legislation*, Lusaka, Zambia.
- NWASCO (2004), *Water Sector Reform in Zambia*, Lusaka, Zambia.
- NWASCO and DTF (2005), *Reaching the Millennium Development Goals for Water Supply and Sanitation in Zambia: The Urban Perspective*, Lusaka, Zambia.
- NWASCO (2006), *Urban and Peri Urban Water Supply and Sanitation Sector Report 2005/2006*, Lusaka, Zambia.
- NWASCO (2007), *Urban and Peri Urban Water Supply and Sanitation Sector Report 2006/2007*, Lusaka, Zambia.
- NWASCO (2008), *Urban and Peri Urban Water Supply and Sanitation Sector Report 2007/2008*, Lusaka, Zambia.
- NWASCO (2009), *Urban and Peri Urban Water Supply and Sanitation Sector Report 2008/2009*, Lusaka, Zambia.
- NWASCO (2010), *Urban and Peri Urban Water Supply and Sanitation Sector Report 2009/2010*, Lusaka, Zambia.
- NWASCO (2011), *Urban and Peri Urban Water Supply and Sanitation Sector Report 2010/2011*, Lusaka, Zambia.
- NWASCO (2012), *Urban and Peri Urban Water Supply and Sanitation Sector Report 2011/2012*, Lusaka, Zambia.
- OECD (2003), *Policy Brief*, on line at [www.oecd.org/](http://www.oecd.org/publications/) publications/ Policy Brief

- Ostrom E., Schroeder L. and Wynne S. (1993), *Institutional Incentives and Sustainable Development – Infrastructure Policies in Perspective*, Westview Press, Colorado, U.S.A.
- Pieterse E. (2008), *City Futures: Confronting the Crisis of Urban Development*, UCT Press, Cape Town, South Africa.
- Pirie M. (1992), *The Ten Objectives of Privatization*, in Butler E. (ed.), *Privatization in the Nineties*, Adam Smith Institute, London, U.K.
- Plummer J. (2002), *Focusing Partnerships*, Earthscan Publications Ltd., London U.K.
- Plummer J. and Nhemachena G. (2001), *Preparing a Water and Sanitation Concession in Gweru*, Working paper, GHK International London
- Prahalad C. (2005), *The Fortune At The Bottom Of The Pyramid – Eradicating Poverty Through Profits*, Wharton School Publishing, Upper Saddle River, New Jersey, U.S.A.
- Prieto B. (2005), *PPPs: A Contractor/Developer's "How to" Guide*, A paper presented to the National Council for Public Private Partnerships (NCPPP) on line at <http://ncppp.org.resources/papers/prieto>.
- Ramaema T. (1997), *BOTT Experience of public-private partnership in the water sector in South Africa*, In *Partnership in the Water Sector for Cities in Africa*, Report of the Cape Town Consultations, United Nations Centre for Human Settlements (Habitat), Nairobi, Kenya.
- Reijniers J. (1994), *Organization of public-private partnership projects*. *International Journal of Project Management*, 12 (3), 137-142
- Rodriguez R. (2004), *The Debate on Privatization of Water Utilities: A Commentary*, 20 (1), 107-112.
- Sahlin-Andersson K. (2000), *National, International and Transnational Constructions of New Public Management*, In Christensen T. and Laegreid P. (ed.), *New Public Management: The Transformation of Ideas and Practice*, Ashgate Publishing, Hampshire, England.
- Sansom K., Kayaga S., Franceys R., Njiru C., Coates S., and Chary S. (2004a), *Serving all urban consumers - A marketing approach to water services in*

- low and middle income countries*, Book 1: Guidance for government's enabling role, WEDC, U.K.
- Sansom K., Kayaga S., Franceys R., Njiru C., Coates S., and Chary S. (2004b), *Serving all urban consumers - A marketing approach to water services in low and middle income countries*, Book 2: Guidance notes for Managers, WEDC, U.K.
- Sarantakos S. (2005), *Social Research*, Third Edition, Macmillan Palgrave, New York, U.S.A.
- Saunders M., Lewis P. and Thornhill A. (2007), *Research Methods for Business Students*, Fourth Edition, Pearson Education Ltd., Harlow Essex, U.K.
- Sherman R. (1990), *The Regulation of Monopoly*, Cambridge University Press, Cambridge, U.K.
- Silverman D. (2006), *Interpreting Qualitative Data 3rd ed*, Sage Publications Ltd., London, U.K.
- Solo T., Perez E. and Joyce S. (1993), *Constraints in Providing Water and Sanitation Services to the Urban Poor*, WASH Technical Report No 85, USAID, Washington D.C., U.S.A.
- Strand J. (2000), *A Political Economy Analysis of Water Pricing in Honduras's Capital, Tegucigalpa*, In Dinar A. (ed.), *The Political Economy of Water Pricing Reforms*, World Bank, Washington D.C., U.S.A.
- Strauss A. and Corbin J. (2008), *Basics of Qualitative Research 3rd Ed*, Sage Publications, Thousand Oaks, California, U.S.A.
- Teisman G. and Klijn E. (2000), *Governing public-private partnerships*, In Osborne S. (ed.) *Public private partnerships, Theory and practice in international perspective*, CPI Antony Rowe, Eastbourne
- Thatcher M. (1993), *The Downing Street Years*, Harper Collins Publishers, London, U.K.
- UN (2000), *United General Assembly Resolution No A/Res/55/2 dated 8th September, 2000*, New York, USA.
- UN (2001), *Global Report on Human Settlements 2001: Cities in a Globalizing World*, Earthscan Publications Ltd., London, U.K.

- UN (2003), *Global Report on Human Settlements 2003: The Challenge of Slums*, Earthscan Publications Ltd., London, U.K.
- UN (2005), *Report of the Fact-Finding Mission to Zimbabwe to assess the Scope and Impact of Operation Murambatsvina by the UN Special Envoy on Human Settlements Issues in Zimbabwe, Nairobi, Kenya*.
- UN (2007), *The Millennium Development Goals Report*, www.un.org/millenniumgoals.
- UN (2010), *Global Report on Human Settlements 2003: The Challenge of Slums, Revised and updated version (April 2010)*, Earthscan Publications Ltd., London, U.K.
- UN (2013), *The Millennium Development Goals Report 2013*, New York, U.S.A.
- UNDP (2004), *Tools for Pro-Poor Municipal PPP, Module 01: Starting Out*.
- UNDP (2006), *Partnering for Development – Making it happen* pp12.
- WEDC (2002), *Public Private Partnerships and the Poor, Private Sector Participation*, 3-Regulation, Loughborough University, Leicestershire, U.K.
- Winston C. (2006), *Government Failure versus Market Failure – Microeconomics Policy Research and Government Performance*, AEI-Brookings Joint Center for Regulatory Studies, The American Institute for Public Policy Research, Washington D.C., U.S.A.
- Wolff G., Gleick P., Cooley H and Palaniappan M. (2006), *Assessing the long term outlook for current business models in the construction and provision of water infrastructure and services*, Organisation for Economic Cooperation and Development, U.S.A.
- World Bank (1997a), *Privatizing Africa's Infrastructure-Promise and Challenge*, Technical Paper No 337, Washington D.C., USA.
- World Bank (1997b), *Tool Kit No 1 – Selecting an option for Private Sector Participation*, Washington D.C., U.S.A.
- World Bank (1997c), *Tool Kit No 2 – Designing and Implementing an option for Private Sector Participation*, Washington D.C., U.S.A.
- World Bank (2004), *Public and Private Sector roles in Water Supply and Sanitation Services*, World Bank Group, Washington D.C., U.S.A.

- WUP (2003), *Better Water and Sanitation for the Urban Poor: Good practices from Sub Saharan Africa, Nairobi, Kenya.*
- Yescombe E. (2007), *Public Private Partnerships, Principles of Policy and Finance, Elsevier Ltd., Oxford, U.K.*
- Yin R., (2003), *Case Study Research: Designs and Methods, Third Edition, Sage Publications, Thousand Oaks, California, U.S.A.*
- Yin R., (2009), *Case Study Research: Designs and Methods, Fourth Edition, Sage Publications, Thousand Oaks, California, U.S.A.*
- Zerah M. (2000), *Early outcomes of Public Private Partnerships on providing water supply to the urban poor: Lessons for India.* Conference Proceeding, International Conference on Sustainable Development of Water Resources, Socio-Economic, Institutional and Environmental Aspects, November 2000.

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